

Cornell University
Announcements



Summer
at Cornell 1970

Courses of Study
and Summer Arts Festival

SUMMER SESSION OFFICE

The office of the Summer Session is in room B-20, Ives Hall; the telephone number of the office and of the director is 256-4987. The office will be open from 8:00 A.M. to 4:30 P.M. Monday through Friday and from 8:30 A.M. to NOON on Saturdays during the period of the Summer Session. Martin W. Sampson is director.

CORNELL UNIVERSITY ANNOUNCEMENTS

Volume 62 of the Cornell University Announcements consists of twenty-four catalogs, of which this is number 2, dated March 18, 1970. Publication dates: twenty-four times a year (four times in August and October; three times in March; twice in May, June, July, September, and November; once in January, April, and December). Publisher: Cornell University, Sheldon Court, 420 College Avenue, Ithaca, New York 14850. Second-class postage paid at Ithaca, New York.

Cornell University

Summer Session
1970

Eight-Week Session, June 22—August 14

Six-Week Session, July 1—August 14

Special Programs of the Summer Session

Summer Arts Festival

Calendar of the Summer Session

June 22, Monday

Registration for the eight-week Summer Session: in room 117, Ives Hall, any time between the hours of 8:30 A.M. and 4:30 P.M. which does not conflict with attendance in the class meeting of courses elected. Persons registering after this date without prior approval will pay a \$10 fee for late registration. Tuition and fees are due for payment at the Treasurer's Office, 260 Day Hall, which closes at 4:30 P.M. Instruction begins at the time and place announced for each course.

June 24, Wednesday

Last day for withdrawal from the eight-week session without payment of a fraction of tuition and fees.

June 26, Friday

Last day for payment of tuition and fees for the eight-week session at the Treasurer's Office, which closes at 4:30 P.M.

July 1, Wednesday

Registration for the six-week Summer Session: in Barton Hall; 8:30 to 11:00 A.M.; 1:00 P.M. to 3:30 P.M. Persons registering after this date without prior approval will pay a \$10 fee for late registration. Tuition and fees are due for payment at the Treasurer's Office, 260 Day Hall.

July 2, Thursday

Instruction in the six-week session begins at the time and place announced for each course. Late registrants report to the Summer Session office, B-20 Ives Hall, to complete registration.

July 3, Friday

Last day for making changes in registration in the eight-week session *without payment of a fee* at the Summer Session office. A \$10 fee for change in registration will be charged after this date. *Last day for withdrawal from the six-week session without payment of a fraction of tuition and fees.*

July 4, Saturday

Holiday

July 7, Tuesday

Last day for payment of tuition and fees for the six-week session at the Treasurer's Office, which closes at 4:30 P.M.

July 13, Monday

Last day for making changes in registration in the six-week session *without payment of a fee* at the Summer Session office. A \$10 fee for change in registration will be charged after this date.

July 17, Friday

Last day for making changes in registration in the eight-week session. *No changes will be permitted after this date except for reasons beyond the control of the student.*

July 22, Wednesday

Last day for making changes in registration in the six-week session. *No changes will be permitted after this date except for reasons beyond the control of the student.*

July 27, Monday

Registration at the Summer Session office for the second period of any three-week unit courses elected by students not previously registered in the Summer Session.

August 13, Thursday

Final examinations begin: schedule on p. 28.

August 14, Friday

Six-week and eight-week sessions end, 4:00 P.M.

BE SURE TO BRING THIS *ANNOUNCEMENT* WITH YOU FOR USE ON REGISTRATION DAY AND THROUGHOUT THE SUMMER SESSION. YOU WILL BE HELD RESPONSIBLE FOR BEING FAMILIAR WITH ALL ITEMS OF INFORMATION AND REGULATIONS IN THIS *ANNOUNCEMENT* WHICH APPLY TO YOUR PARTICIPATION IN THE SESSION.

AN APPLICATION FORM IS IN THE
BACK OF THIS *ANNOUNCEMENT*

Contents

2	CALENDAR
5	GENERAL INFORMATION
5	Admission
8	Academic Credit
9	Grades
10	Registration
12	Tuition and Fees
14	Financial Aid
14	The Graduate School
16	Housing and Dining
18	Health Services
19	Counseling Services
20	Libraries
21	Special Regulations
22	The Weekly Bulletin and Calendar
22	Extracurricular Activities
26	Summer-Ithaca
27	SCHEDULE OF COURSES
29	EIGHT-WEEK SESSION
33	SIX-WEEK SESSION
62	SPECIAL PROGRAMS OF THE SUMMER SESSION
62	Advanced Placement Program for Secondary School Juniors
63	Adventures in Physics for Secondary School Juniors
63	Agricultural Education Summer Program
64	Natural Resources Institute
65	Architecture Summer Term
66	Asian Language Program
67	Continuing Education in Planning
69	Internship Program in Planning and Public Administration
69	Cornell Alumni University
70	Institute in Earth and Space Science
71	Engineering Cooperative Program Summer Term
71	Engineering Short Courses
74	Introductory Program in Field Ecology
74	Cornell German Program in Heidelberg
75	Unit Courses in Guidance
76	Hotel Administration Summer School
76	Human Ecology Unit Courses
77	Latin American Language and Area Program
78	Summer Program in Marine Science
79	Reading and Study Skills for Secondary School Students
80	Shell Merit Fellowship Program
C-1	SUMMER ARTS FESTIVAL
C-2	Creative Writing Workshops
C-4	Summer Concert Series
C-4	Summer Viol School
C-4	Composers Workshop
C-5	Choral Music Program
C-6	Studios in Art
C-7	Theatre Arts Dance Program
C-7	Film Production Studio
C-8	Summer Repertory Theatre
C-8	Theatre Arts Courses of Study
81	UNIVERSITY ADMINISTRATION
81	ADMINISTRATIVE BOARD
81	SUMMER GUEST FACULTY
82	SUMMER RESIDENT FACULTY
85	INDEX
91-92	APPLICATION FOR ADMISSION

The courses and curricula described in this *Announcement*, and the teaching personnel listed therein, are subject to change at any time by official action of Cornell University.

Cornell University

THE SUMMER SESSION

GENERAL INFORMATION

The Summer Session of Cornell University is planned with the cooperation of the faculties of the separate schools and colleges. The program is designed with particular regard for what can be taught satisfactorily in a short term and in a summer period environment. Every effort is made to maintain the same standards of instruction and academic performance as those of the academic year.

A balanced program of study and recreational activities is available to college-bound secondary school seniors, undergraduates, graduate degree candidates, and persons interested in continuing education for personal or professional improvement. A varied selection of courses is offered by the Summer Session to those persons for whom the summer period is especially convenient for study.

Classes in the summer provide the particular advantage of optimum size for close association between student and instructor. The median class size in past summers has ranged from twelve to fifteen students.

All necessary facilities of the University are available to students registered in the Summer Session: libraries, classrooms, and laboratories; residence halls, dining rooms, and cafeterias; health services and medical care; counseling services; student union, chapel, playing fields, and a variety of recreational areas.

Admission

It is the policy of Cornell University to actively support the American ideal of equality of opportunity for all, and no student shall be denied admission or be otherwise discriminated against because of race, color, creed, religion, or national origin.

The Summer Session objective is to place the facilities of the University at the disposal of persons who can use them to good advantage for serious educational purposes during the summer period.

Admission of undergraduates or graduate students to the Summer

Session establishes no priority with respect to admission to the regular terms. Students seeking admission to Cornell undergraduate colleges should apply directly to the Office of Admissions, 247 Day Hall. Students wishing to apply to the Graduate School should write to the dean of the Graduate School, Sage Graduate Center, Cornell University, Ithaca, New York 14850.

Students are eligible for admission to the Summer Session in the following categories:

UNDERGRADUATES

The undergraduate category includes all persons who are candidates in good standing for the Bachelor's degree and those precollege, secondary school graduates who have been accepted for admission to Cornell University or to any other college or university. No other secondary school students will be accepted except in certain other programs of the Summer Session described on pp. 62-80.

Undergraduates are required to register for a minimum of four credit hours in the eight-week session or three credit hours in the six-week session. Permission to register for more than ten credit hours for the eight-week session or eight credit hours for the six-week session will be granted only to those students with high academic averages, upon the recommendation of their advisers and the approval of the director of Summer Session.

Applying for admission consists of completing the application form contained in the back of this *Announcement*. Additional application forms will be mailed on request. A Cornell University undergraduate degree candidate must have the application approved by the appropriate officer of his school or college (see p. 9).

Applications for admission should be returned by June 16 for the eight-week session or June 24 for the six-week session. Notification of acceptance to register will not be sent out for applications received after those dates. Late applications are welcomed, but obviously the risk of finding enrollment filled is greater.

Secondary school graduates and undergraduate degree candidates should consult the appropriate official, either in the college to which they have been admitted, or where they are now matriculated, for advice in planning their summer study programs. This is important in order to assure that the credit they will earn will be accepted toward their degree programs. Credit for courses in the Summer Session is comparable to credit for courses offered during the academic year at Cornell.

GRADUATES

Graduate classification applies to candidates for advanced degrees either at Cornell University or other colleges or universities. Application for admission should be made by June 16 for the eight-week session or June 24 for the six-week session to ensure a place in classes. A graduate

student may apply as late as the date of registration for either session, but he does so at the risk of finding enrollment filled.

An application form is included in the back of this *Announcement* or will be mailed on request. Admission to the Summer Session does not constitute admission to the Graduate School at Cornell University as a degree candidate.

A graduate student matriculated in the Graduate School of Cornell University may, in the eight-week session, register for as many as ten hours of credit upon recommendation of his Special Committee chairman. In the six-week session the maximum is eight credit hours.

Degree candidates may seek residence credit toward degrees in the amount of one-half of a unit for a program of eight or more credit hours in the eight-week session, or in the amount of two-fifths of a unit for a program of six or more credit hours in the six-week session. Request for residence credit is made to the Graduate School and must be supported by the student's Special Committee. (See p. 15 for information regarding admission to the Graduate School.)

A candidate for a graduate degree in an institution other than Cornell University who is planning to obtain credit toward his degree by means of his Summer Session program, does not register in the Cornell Graduate School but only in the Summer Session. He may register for a maximum of ten credit hours in the eight-week session or eight credit hours in the six-week session. Approval of the director of Summer Session is required for programs exceeding the maximum. Before registering he should arrange with the institution in which he is a degree candidate for the acceptance of the credit earned.

SPECIAL STUDENTS

Teachers and members of the general public who are not candidates for academic degrees are eligible for admission to the eight- or six-week session to take courses to meet certification requirements, for personal interest, or for professional improvement. Maximum course load is the same as for graduate students (see above). Courses may be elected at either the graduate or undergraduate level depending on the student's background. To apply for admission, complete the application form included in the back of this *Announcement*, or which will be mailed on request. Application for admission should be made by June 16 for the eight-week session or June 24 for the six-week session to ensure a place in classes. A special student may apply as late as the date of registration for either session but does so at the risk of finding the course enrollment filled.

Secondary school students who do not classify as "undergraduates" (see p. 6) are not eligible for admission to either the eight- or the six-week sessions as "special students."

College students who have been suspended or dropped from their college or university are not eligible for admission as "special students" until at least one year after the date of their suspension or separation. Exceptions to this rule are rarely granted and then only with the specific approval of the director of Summer Session.

APPLICATION FOR ADMISSION

Admission to the eight-week or six-week session is gained through formal application. The application form and instructions are included in the back of the *Announcement*. Requests for additional copies are to be addressed to the director of Summer Session. All parts of the form pertaining to the student who is applying must be filled out in full. Cornell undergraduates and those students who have been accepted for fall admission are required to have the application signed by the appropriate official of his school or college (see p. 9).

Registration coupons, necessary for registration in the eight- or six-week sessions, will be mailed to the applicant after favorable action on the application has been taken. Included as part of the registration form is a certificate of admission. A housing application and information on housing and dining will be sent with the registration material.

Applicants for admission to the Special Programs of the Summer Session do not use the form referred to above. Each program has a separate application form which is obtained by request from the director of that program. (See descriptions of Special Programs, pp. 62-80).

Academic Credit

Courses offered in the eight-week and six-week sessions are assigned appropriate hours of credit. The same is true in many of the other programs of the Summer Session. Students are not to register for any course work which normally cannot be completed by the end of the Summer Session term.

In this *Announcement* each credit course is marked immediately after the title in one of three ways.

(U): Courses marked (U) carry credit only at the undergraduate level.

(U,G): Courses marked (U,G) are offered both at the graduate and undergraduate levels. Graduate students who are candidates for advanced degrees or who wish certification for work done at the graduate level must indicate at the time of registration their intention to complete the course at the graduate level and must be prepared to do any additional work that may be required. Students registered in "U,G" courses should consult with their instructors early in the session to see that the level is properly recorded. Accuracy of final grade reporting depends upon such action.

(G): Courses marked (G) are intended primarily for students who are candidates for advanced degrees, for teachers, and for others who wish certification to accrediting agencies for work done at the graduate level. Undergraduates with adequate preparation may register for these courses only after receiving permission from the instructors in charge.

AUDITORS

A graduate or special student who wants to attend a course or courses, but does not want credit, may register for such courses as an auditor.

Auditing a course requires regular attendance in class and completion of all required work except the final examination. The audited course will appear on the student's record unless he is a student in the Cornell University Graduate School; in this case, no record will appear. Registration will be cancelled for persons who do not participate fully. Tuition and fees will be charged at the same rate as for credit.

Any person who wishes to cancel or withdraw from a course as an auditor, must advise the Summer Session office, B-20 Ives Hall, of his intention in person. Approval of withdrawal requires the surrender of the student's Official Registration Certificate and all privileges it provides as of the date granted.

Undergraduates are not permitted to register for audit.

CREDIT TOWARD DEGREES AT CORNELL UNIVERSITY

A student matriculated in an undergraduate school or college of Cornell University, or a student accepted for fall admission as an undergraduate of Cornell University will be admitted to the Summer Session only after the appropriate officer from the following list has approved and signed his application for admission.

College of Agriculture: Professor J. P. Hertel

College of Architecture: Dean Burnham Kelley, Professors O. M. Ungers, John P. Shaw, Martin Dominguez, Jason Seley

College of Arts and Sciences: Associate Dean A. J. Cheney

College of Engineering

Basic Studies: Professor H. G. Smith

Chemical Engineering: Professor C. C. Winding

Civil Engineering: Professor William L. Hewitt

College Program: Professor William H. Erickson

Electrical Engineering: Professor J. L. Rosson

Industrial Engineering: Professor B. W. Saunders

Materials Science and Engineering: Professor Malcolm S. Burton,
L. W. VanDuzer

Mechanical Engineering: Professors G. R. Hanselman, Dennis G.
Shepherd

Engineering Physics: Professor T. R. Cuykendall

School of Hotel Administration: Dean R. A. Beck

College of Human Ecology: Mrs. Joyce McAllister

School of Industrial and Labor Relations: Assistant Dean D. P.
Dietrich

Division of Unclassified Students: Professor M. W. Sampson

Grades

All courses are reported on the basis of letter grades: A+ through D- and F (for failure). Only two exceptions will be made: (1) Auditors will not receive a grade. (2) S-U grading (Satisfactory-Unsatisfactory) may be used for students registered for research or other individual work, and in certain courses so designated by the instructors at the beginning of

10 REGISTRATION

the summer term. Students in courses where optional grading (A-F or S-U) is available must inform their instructor if they wish S-U grades; they must then obtain from him a form to be completed, signed by the student and the instructor, and turned in to the Summer Session office by the end of the second week of classes. In the case of Cornell undergraduate students, permission to register for S-U grades must also be obtained from the appropriate official of their school or college.

INCOMPLETES. If a student is prevented, for medical or other reasons acceptable to the instructor, from completing the work in any course before the last day of the session, he may request the instructor to report his grade as "Incomplete". It is the student's responsibility to make specific arrangements with his instructors to complete the course work and have the grade reported to the Summer Session office. A mark of "F" will become the final recorded grade for the course if work is not completed by January 15, 1971.

A student who drops a course without official change in registration will automatically receive "F", a failing grade.

TRANSCRIPTS. Students from colleges other than Cornell who need transcripts of their Summer Session record should report to the Office of the Registrar, 240 Day Hall. A transcript will be sent to the college which the student designates upon completing the form provided by the Office of the Registrar, and upon payment of a fee of \$1 per transcript.

Students may hand in self-addressed postcards with their final examination papers to receive the final marks in their courses, or they may mail or bring a self-addressed envelope to the Summer Session office, B-20 Ives Hall. *Under no circumstances will grades be given over the telephone.*

Grades for courses taken by Cornell undergraduate and graduate students are automatically sent to their college offices.

Registration

Formal registration is required for admission to courses of the Summer Session.

EIGHT-WEEK SESSION

All students in the eight-week session will register on Monday, June 22. All classes scheduled for the eight weeks will start on this date. Students are to complete their registration at any time during the day between the hours of 8:30 A.M. to 4:30 P.M., which does not conflict with attendance in the class meeting of courses for which they are registering.

Each student must bring his registration forms to room 117, Ives Hall for completion and approval. Directions for processing the registration forms will be given at that time.

Students in the eight-week session may elect a course from the program in the six-week session provided the time schedule of classes does not conflict. Students taking courses in both sessions will register their entire program on Monday, June 22.

SIX-WEEK SESSION

Students in the six-week session will register on Wednesday, July 1, in Barton Hall from 8:30 to 11:30 A.M. and from 1:00 to 3:30 P.M. The certificate of admission, which is part of the registration forms sent to each student for the six-week session, will state the hour of the day when he will be admitted to Barton Hall. Directions for registration procedure will be issued at the entrance. Students, who for any reason, have not received their registration forms will report to the admissions table and students who have not filed an application for admission will report directly to the information table.

UNIT COURSES

Unit courses are those of less than six weeks in length, and are indicated by a *u* following the course number, with the dates included in the course descriptions. Students registering for a unit course offered in the first half of the six-week session (July 1 to July 24), or registering for both halves of unit courses, such as French 131*u* and French 132*u* or Chemistry 107*u* and 108*u*, will register at Barton Hall on July 1. (See information on six-week registration, above.) Students registering only for a unit course offered in the last half of the six-week session (July 27 to August 14) must register at the Summer Session office, B-20 Ives Hall, on July 27 at a time of day that does not interfere with their class attendance.

Students registering for unit courses in the Special Programs (pp. 62-80) will register *at the first class meeting of the course* at the time and place indicated on their registration material.

SPECIAL PROGRAMS

Registration for Special Programs (pp. 62-80) will take place at the time and place specified for each program.

LATE REGISTRATION

Persons who fail to appear for registration on the date specified for either the eight-week or six-week sessions will be charged a fee of \$10 for late registration unless the fee is waived through prior approval of the Summer Session director.

If a student knows that circumstances beyond his control will prevent him from registering at the specified time, he should write to the director of the Summer Session explaining the circumstance, and requesting permission to register late without payment of the late fee.

CHANGES IN REGISTRATION

Changes in registration include cancellation of a course, change from one course to another, change from undergraduate to graduate level of credit or vice versa, addition of a course to a program, change in credit hours, or change from credit to auditor status or vice versa.

No change of registration is official unless made by appearing at the Summer Session office, B-20 Ives Hall. Except for reasons beyond the control of the students, no change in registration will be permitted after 4:00 P.M. on July 17 for students in the eight-week session and after 4:00 P.M. on July 22 for those in the six-week session. When a change in registration involves enrollment in another course or change in credit status, permission of the instructor of the course is necessary before the change will be made. A Cornell undergraduate must also obtain permission from the appropriate official of his school or college, who originally approved his application.

A student enrolled in the eight-week session who desires to change courses to those in the six-week session only must come to the Summer Session office after the regular six-week session registration day (July 1) and initiate a change of registration.

Penalty fees for changes in registration after the deadline dates, are described under Tuition and Fees, p. 13.

WITHDRAWAL FROM SUMMER SESSION

A student may apply for withdrawal at any time by appearing in person at the Summer Session office and stating his reason for withdrawing. The student is required to pay twenty percent of the term's tuition and general fee for each week or fraction thereof between registration day and the effective date of withdrawal. There is no charge if withdrawal is made by Wednesday, June 24, in the eight-week session; or by Friday, July 3, in the six-week session.

A grade of "F" will automatically be recorded for all courses in which the student is enrolled if he withdraws without officially notifying the Summer Session office.

Approval of withdrawal requires the surrender of the student's Official Registration Certificate and all privileges it provides as of the date granted.

Tuition and Fees

Tuition and fees are due and payable at the Treasurer's Office in Day Hall on registration day, which for the eight-week session is June 22, and for the six-week session is July 1.

The last day for payment without penalty is Friday, June 26, in the eight-week session, and Tuesday, July 7, in the six-week session. A penalty of \$10 is charged if payment is made after these dates. The Treasurer's Office closes at 4:30 P.M.

TUITION

Tuition is charged according to the number of credit hours for which the student is registered. The rate of tuition is \$65 per credit hour. Students in the eight-week or six-week sessions, who are permitted to elect one or more courses from a Special Program of the Summer Session (see pp. 62-80) will be charged at the \$65 per credit hour rate.

FEES

Students in both the eight- and/or six-week sessions will pay, in addition to tuition, a general fee of \$5 per week. This entitles them to medical and hospital services (see pp. 18 and 19), administration services, and student union membership. Students who are registered full time in the Graduate School during the previous spring or fall term are not required to pay the general fee. An asterisk (*) preceding the course number indicates that fees for laboratories, field trips, and incidental expenses are charged. The amount of the fee immediately follows the complete course description.

A student who finds it necessary to register after the regular registration date for either session must pay a \$10 late registration fee unless prior approval for the delay has been obtained from the director of the Summer Session (see p. 11).

A student who has approval to make a change in program (see definition on p. 12) after 4:00 P.M. on July 3 in the eight-week session, or July 13 in the six-week session, must pay a \$10 change of registration fee. No change in program will be permitted after 4:00 P.M. on July 17 for students in the eight-week session, and after 4:00 P.M. on July 22 for those in the six-week session, except for reasons beyond the control of the student and with the approval of the director of the Summer Session.

GRADUATE REGISTRATION FEE. Applicants applying for admission to the Graduate School as well as to Summer Session who have not matriculated previously at Cornell must pay a fee of \$35 to the Graduate School in addition to the regular tuition and fees as required by the Summer Session. The Graduate School fee is used to pay the matriculation costs and covers certain expenses incidental to graduation if the student receives a degree. The fee is not refundable.

For other information concerning Graduate School regulations, see pp. 6, 7, 14-16.

OTHER REGULATIONS CONCERNING PAYMENTS

Any student, graduate or undergraduate, who fails to pay his tuition, fees, and other indebtedness at the Treasurer's Office within the time prescribed by the University, will be dropped from the University. When in his judgment the circumstances in a particular case so warrant, the treasurer may allow an extension of time to complete payments.

14 THE GRADUATE SCHOOL

For such an extension, the student will be assessed a fee of \$5. A reinstatement fee of \$10 will be assessed any student who is permitted to continue or return to classes after being dropped from the University for default in payments. For reasons satisfactory to the treasurer and the registrar, which must be presented in writing, the latter assessment may be waived in any individual case.

The amount, time, and manner of payment of tuition, fees, or other charges may be changed at any time without notice.

CASHING OF CHECKS. The treasurer of the University accepts checks drawn on banks in the United States in settlement of charges payable at his office, but a rule of the Board of Trustees forbids him to cash any credit instrument, even to the extent of accepting a check or draft in amount greater than the sum due and returning the excess in cash. Students therefore are advised to open an account in an Ithaca bank as soon as they arrive in town, or else to provide themselves with travelers' checks, drafts on New York City banks, money orders, or other forms of credit instruments which a bank will cash in the ordinary course of business.

Financial Aid

Normally students registered in the Summer Session are not eligible for University financial aid. In special cases, however, when the applicant is a regular full-time student at Cornell and his Summer Session program has the full approval of his faculty adviser, he will be considered for loan assistance.

There are no general University scholarships for Summer Session study.

Opportunities for student employment during the summer are so limited that students should not rely on this means of financing any part of their Summer Session expenses. More specific information can be obtained from the Office of Scholarships and Financial Aid, room 105, Day Hall.

The Graduate School

The Graduate School is an administrative unit entirely separate from the administration of the Summer Session. *Only candidates for advanced degrees at Cornell University are registered with the Graduate School in the summertime.* Students who take course work at the graduate level in the Summer Session but who are not candidates for advanced degrees at Cornell University have no connection with the Graduate School.

CREDIT FOR ADVANCED DEGREES

Summer Session credit may be used for partial fulfillment of residence requirements for the following advanced degrees, under regulations of

the faculty of the Graduate School: Master of Arts (M.A.); Master of Science (M.S.); Master of Science for Teachers (M.S.T.); Master of Arts in Teaching (M.A.T.); Master of Fine Arts (M.F.A.) [only in English]; Master of Industrial and Labor Relations (M.I.L.R.); Doctor of Education (Ed.D.); and Doctor of Philosophy (Ph.D.). Prior approval of the candidate's Special Committee should be obtained.

When the candidate has registered in both the Summer Session and the Graduate School, the completion of eight or more hours of credit in the eight-week session, or a minimum of six hours in the six-week session, will count as one-half or two-fifths of a residence unit respectively, if approved in advance and reported as acceptable by the student's Special Committee.

Requirements for Master's degrees may, upon approval of the General Committee of the Graduate School, be completed solely during the summer period if instruction in the chosen major and minor subjects is offered. Only two residence units for study in the Summer Session may be accepted in fulfillment of requirements for the doctorate. Upon recommendation by the Special Committee of a student and on approval by the dean of the Graduate School, residence may be transferred for study in one preceding Cornell Summer Session period if such study is attested to be an integral part of the graduate program subsequently undertaken.

ADMISSION

Students intending to become candidates for advanced degrees at Cornell should write to the Dean of the Graduate School, Sage Graduate Center. If an *Announcement of the Graduate School* is also wanted, the major field of concentration should be stated. Zip code must be included with applicant's address. Applications for admission to the Graduate School received prior to May 1 will be acted upon in time for the accepted candidates to register with the Graduate School and Summer Session on registration day. The Admissions Committee cannot give assurance that an application received after May 1 will receive the same consideration that it would receive if filed before that date.

REGISTRATION FEE. On admission to the Graduate School, the applicant is required to pay the sum of \$35 within twenty days of notification of admission, unless he has matriculated previously at Cornell (see p. 13).

REGISTRATION

Only students approved for admission in the Graduate School must register with both the Summer Session and the Graduate School. Full information and proper forms for registering in the Graduate School may be obtained from the Graduate School desk at Barton Hall on registration day. The registration must be completed within *one week* of registration day. To register, each candidate must file a Registration-

of-Courses form properly approved by his Special Committee. Each *new* candidate must file a Nomination-of-Committee form.

Such registration is regarded in the same fashion as registration for a regular semester and affects the deadlines for fulfillment of requirements.

Candidates registered in the Summer Session who were not registered in the preceding spring term but who expect to continue as full-time graduate students in a succeeding fall or spring term must arrange with the dean of the Graduate School for permission to register in the regular term.

COMPLETION OF REQUIREMENTS

Candidates for advanced degrees who expect to complete requirements and to take their final examinations at the end of the Summer Session should call at the Office of the Graduate School not later than the third week of the session for the necessary instructions and forms.

CANDIDATES IN THE FIELD OF EDUCATION

Students interested in the degrees of Master of Arts in Teaching (M.A.T.) or Doctor of Education (Ed.D.) should consult the *Announcement of Education*, which may be obtained by writing to Cornell University Announcements, Day Hall. The faculty of the Field of Education of the Graduate School has jurisdiction over these degrees.

Housing and Dining

HOUSING

Rooms are available in University-operated housing units for all students registered in the eight-week and six-week Summer Sessions, both graduate and undergraduate men and women. A leaflet giving detailed information on housing, *Residence Halls for Men and Women*, will be mailed by the office of the Summer Session after admission has been approved. Rooms are furnished with desk, desk chair, desk lamp, bookcase, reading chair, chest of drawers, bed linens, (laundered by the University), blankets, and bedspread. Bed linens are exchanged weekly. Daily room care, including bedmaking, is the responsibility of the occupant. The occupants also furnish their own towels and soap.

Students registered in any program of the Summer Session who withdraw before the program is completed must terminate their occupancy of University-operated housing facilities, and they must officially notify the office of the Summer Session of their intent to withdraw.

Students may make application for single or double rooms in University residence halls if they desire. The rates for the eight-week Summer Session are \$100 for single occupancy and \$76 per person for double accommodations. For the six-week Summer Session, the rates are \$75 for single occupancy and \$57 per person for double accommoda-

tions. For periods of three weeks or less, the rates are \$13.50 single and \$10.50 double occupancy per person per week or part of a week. All rates cover cost of room only.

There is a head resident in each hall who, in cooperation with the staff of the Office of the Dean of Students, is concerned with the general welfare of the students.

Meals can be obtained at the campus public service dining units.

Opening and Closing Dates

Living units to be used during the eight-week Summer Session will open for occupancy on Sunday, June 21, and will close at 2:00 P.M., Saturday, August 15. Living units to be used during the six-week Summer Session will open for occupancy on Tuesday, June 30; they will close at 2:00 P.M. Saturday, August 15. *Earlier or later occupancy will not be possible under any circumstances.*

Application for Rooms

An application for a room assignment in a residence hall cannot be given consideration unless it is submitted on an official application form to the Department of Housing and Dining Services. Room application forms are distributed *only* by the office of the Summer Session *after* admission has been approved, and each student will automatically receive one with his Summer Session registration coupons.

Assignments

Assignments are made in order of receipt of application, and the earliest mailing date will be approximately May 15. Since requests for the six-week or eight-week Summer Session must take precedence over those for shorter periods, it may be impossible to forward actual assignments until ten days prior to short course registrations.

Room Deposits

A \$5 room deposit is required. A check or money order, drawn to the order of Cornell University, should be attached to the room application to ensure prompt action. *This deposit is applied towards the residence charge.*

Room deposits which accompany room application will be refunded to those students who file with the director of housing and dining services written intention to withdraw the application, provided such notice is received by June 15. *The deposit will not be refunded on cancellations received after June 15.*

Married-Student and Off-Campus Housing

Houses, apartments, and rooms currently available for rent in Ithaca and vicinity are posted in the Off-Campus Housing office, room 223,

Day Hall. This office functions as a bureau of information only, maintains files of accommodations listed voluntarily by landlords for students and staff members who call at the office. Because the availability of accommodations is constantly changing it is not practical to compile or mail listings, nor is it feasible to maintain a waiting list of persons seeking accommodations.

Students wishing to sublet houses or apartments off campus, or married-student apartments operated by the University on campus, are advised to arrive in Ithaca in advance of registration in order to secure such quarters. Sublet rentals for the Summer Session range from \$65 to \$175 a month.

There is normally an adequate supply of rooms available in off-campus locations for the Summer Session. These rooms vary considerably in comfort, convenience, and safety. Before leasing a room careful consideration should be given such details as distance from campus and dining facilities, price, ventilation, sanitation, furnishings, and fire escapes. Arrival in Ithaca a few days in advance of registration will assure students of a better selection of off-campus rooms.

Information concerning married-student or off-campus accommodations will be mailed upon request. Address inquiries to the Department of Housing and Dining Services, Day Hall, Cornell University, Ithaca, New York 14850.

DINING SERVICES

The student union building, Willard Straight Hall, offers complete cafeteria and snack bar service as does Noyes Lodge on Beebe Lake. Other student dining facilities include the student cafeteria in Statler Hall and the Dairy Bar cafeteria in Stocking Hall. Additional facilities may be available according to need. Meals obtained in these places, or in the cafeterias, dining rooms, and restaurants near the campus, will cost approximately \$3.25 to \$4.50 per day.

Health Services

The University student medical services are available to all students officially registered in the Summer Session as follows:

FOR REGULAR EIGHT- AND SIX-WEEK SUMMER SESSION STUDENTS. (1) Unlimited visits to the Gannett Medical Clinic, 10 Central Avenue; (2) hospitalization at Tompkins County Hospital with medical care for three days for students in the eight-week session and two days for those in the six-week session; (3) emergency surgical care, defined as initial surgical procedures which are necessary for the immediate welfare and safety of the patient.

FOR STUDENTS REGISTERED IN SPECIAL PROGRAMS. (1) Same as (1) above for the period of registration; (2) hospitalization based upon length of registration—none if less than three weeks; if more than three weeks, graduated up to fourteen days, the maximum based

on the entire Summer Session of approximately three months; (3) emergency surgical care; same as (3) above except none for students registered for less than three weeks.

If a student elects to consult a private physician, the cost of this service is not covered by the health fee.

Students who withdraw from the Summer Session terminate health services as of the withdrawal date.

CLINIC HOURS

Monday through Friday: 9:00 A.M.—5:00 P.M.

Saturday: 9:00 A.M.—12:00 M.

Sunday: 10:00—11:00 A.M.

Physicians are on duty at the above hours except between 12:00 M. and 2:00 P.M. weekdays. Nurses are in attendance at all times during clinic hours.

AFTER CLINIC HOURS

On a limited basis, with a nurse in attendance, the Gannett Medical Clinic will also be open from 12:00 M. to 5:00 P.M. on Saturdays for illness and accidents occurring after regular clinic hours. *These extra hours are not intended for conditions that could be treated during the regular hours.* Should illness or injury occur when the clinic is not open, students should call 272-6962 for instruction. All accidents should be reported to the Safety Division, 256-5211. Extended hours are in effect for the eight-week Summer Session.

EMERGENCY SERVICE

A doctor is always available for calls of an emergency nature when an accident¹ has occurred or when the student is too ill to come to the clinic or the hospital. (In the women's dormitories these calls should be made by the head resident whenever possible.) Telephone calls for this service should be made through the Gannett Medical Clinic, 256-3493, when the clinic is open (see hours above); to 272-6962 after clinic hours. This service is not designed to care for students in their rooms. A charge of \$5 in the daytime and \$10 at night is made for such calls.

Counseling Services

OFFICE OF THE DEAN OF STUDENTS

The Office of the Dean of Students, 133 Day Hall, has a trained staff available for conferences with students concerning on-campus and off-campus housing; student activities and organizations; selective service information; and any other matters of personal, educational, and social concern to individual students and student groups.

1. Accidents—Call 256-5211 (Division of Safety and Security).

INTERNATIONAL STUDENT OFFICE

The International Student Office, 142 Day Hall, maintains a staff prepared to assist all students from other countries who may need information about living quarters, immigration matters, personal and social problems, or other questions.

Libraries

The University libraries in Ithaca comprise the Central Library, consisting of the Olin Library for graduate study and research and the Uris Library for undergraduate use, the Mann Library of Agriculture and Human Ecology, the Fine Arts Library, the Business and Public Administration Library, the Engineering Library, the Library of the School of Hotel Administration, the Library of the School of Industrial and Labor Relations, the Law Library, the Physical Sciences Library, and the Veterinary Library. In addition there are numerous departmental libraries in the separate schools and colleges.

The union catalog, the general collection of reference books and documents, the chief bibliographical publications, and the principal series of academy and learned society publications are located in the Olin Library. Specialized reference materials will be found in the various college, school, and departmental libraries. The Reference Department of the Olin Library and the library staffs of the college, school, and departmental libraries are prepared to assist students in the effective use of the libraries and in the location of research materials.

The total library resources on the Ithaca campus exceed 3,500,000 volumes. The number of periodicals, transactions, and other serials currently received is over 30,000.

In the course of their development the libraries have acquired and have built up a variety of special collections. Illustrative of these resources are collections on the American Civil War, Abolition and Slavery, Apiculture, Botany, China and Southeast Asia, Dante, English and French Revolutions, Freemasonry, History of Science, History of Superstition, Icelandic, Joyce, Kipling, Pascal, Petrarch, Shaw, Wordsworth, and Regional History; and the University Archives.

The privilege of borrowing books for home use is granted to all students who comply with the library regulations. Presentation of the official Summer Session Registration Certificate is required when borrowing books. Stack permits for the Olin and Mann libraries are issued to graduate students. Carrels in the stacks of the Olin, Mann, and Industrial and Labor Relations libraries are also available for assignment to graduate students upon application.

Xerox copy service for library books and periodicals and academically related materials is available in the Olin, Uris, Mann, Physical Sciences, Law, Business and Public Administration, and Engineering libraries. A schedule of the hours for all libraries on campus will be available at summer session registration desks and in the *Weekly Bulletin*.

Special Regulations

STUDENT CONDUCT

The Summer Session is administered under the same general regulations governing student conduct which apply to all other sessions of the University, with slight modifications to cover the special circumstances of the Summer Session. Students are expected to familiarize themselves with the contents of the Regulations for the Maintenance of Public Order, the Student Code, and the Academic Integrity Code. The regulations and codes are available at Summer Session registration, and from the Office of the Dean of Students, 133 Day Hall.

The regulations and codes, products of extensive deliberations involving students, faculty, and administration, are statements of standards and regulations necessary to ensure maximum individual freedom and the effective functioning of the University as an educational institution.

In addition, students living in University dormitories and other group residences are responsible for familiarizing themselves with the specific rules applying to their places of residence. They may obtain copies of the rules from dormitory head residents, graduate residents, and other counselors.

The responsibility for administration of faculty policy with respect to student discipline is exercised by the office of the Judicial Administrator.

AUTOMOBILE REGULATIONS

The University does not encourage student use of automobiles but recognizes that in certain cases there may be important reasons why a student needs an automobile. Any person registered in a program of the Summer Session who owns, maintains, or, for his own benefit, operates a motor vehicle in Tompkins County must do the following: (1) He must register the vehicle with the Traffic Bureau of the Division of Safety and Security at the time of Summer Session registration, or within five days after bringing it to Tompkins County during the term. Parking is prohibited on the grounds of the University during this period. (2) He must pay a fee of \$1 and display, as directed, a registration sticker. (3) He must be legally qualified to operate a motor vehicle in New York State. (4) The vehicle must be registered in New York State or legally qualified to be operated on the highways of New York State. (5) The vehicle must be effectively insured against public liability for personal injury and property damage for the minimum of \$10,000-\$20,000-\$5,000.

Motorcycles and motor scooters must be registered and may not be used on campus during class hours. Trailers, as family units, are not allowed on any University property. Students may not park on campus from 8:00 A.M. to 5:00 P.M. Monday through Friday and from 8:00 A.M. to 1:00 P.M. on Saturday. Parking restrictions are in effect twelve months of the year.

Each student registered for any program in the Summer Session is required to complete the Division of Safety and Security IBM card at the time of registration whether or not he has a vehicle. This card is kept on file by the Division of Safety and Security whose office is the only one on campus open twenty-four hours a day to which inquiries, in the event of an emergency, can be directed when other sources of information are closed.

The student's registration in the University is held to constitute an agreement on his part that he will abide by its rules and regulations with regard to traffic and parking or suffer the penalty prescribed for any violation of them.

The Weekly Bulletin and Calendar

The Summer Session *Weekly Bulletin* contains official notices and announcements of events of general interest to Summer Session students and faculty. As the only campus-wide information medium during the summer, it will include the weekly calendar, news items, features, and notes of general interest. The first issue of the *Weekly Bulletin* will be available at registration on July 1 at Barton Hall. The *Bulletin* will be distributed on campus each of the five succeeding weeks of the Summer Session.

Copies will be available without charge to anyone at the following places: Dairy Bar; Donlon Hall; Noyes Lodge; Martha Van Rensselaer cafeteria; Willard Straight Hall, main desk; Statler lobby, main desk; Summer Session office, B-20 Ives Hall; Risley Hall; University Halls; and Visitor Information Center in Day Hall.

Extracurricular Activities

The Summer Session, with the cooperation of various departments and agencies of the University, presents a program of public events and recreation designed to enrich the campus experience of its summer visitors. This year a Summer Arts Festival is being presented in addition to the regular program of planned activities. For more information about the Summer Arts Festival, see pp. C-1-C-8.

WILLARD STRAIGHT HALL

The University union building is reserved for the students, faculty, staff, alumni, and guests of Cornell University as a campus gathering point and a center for social, cultural, and recreational activities. It provides meal service; snacks for late afternoon and evening; lounges, rooms for student meetings; the University Theatre; a billiard and game room; a barber shop for men; a browsing library well stocked with books, periodicals, and newspapers; a craftshop; a music room; and an art lounge.

In addition to regular meal service, the Willard Straight dining department is equipped to serve informal parties, teas, receptions, private

luncheons and dinners, and barbecues, and to provide picnic box lunches.

The main desk is a focal point for campus information and services. Newspapers, current magazines, postcards, candy, and cigarettes are available. The daily tours of the campus originate here. Travel information and road maps may be procured from the desk.

The Willard Straight Summer Session Committee arranges lectures, trips, nature walks, art exhibits, open houses, tournaments, receptions, and dances. Students are encouraged to submit new program ideas and to participate on the committee.

The right is reserved to request appropriate identification from persons who use the Hall and its facilities and who participate in its program.

CONCERTS

The 1970 Summer Session Concert Series is a part of the Summer Arts Festival, which is being presented for the first time this year. For information on the Concert Series, as well as the Summer Arts Festival see pp. C-1-C-8.

RELIGIOUS SERVICES

Sage Chapel

Nondenominational services (ecumenical insofar as possible) are held in Sage Chapel throughout the academic year. Since 1875 Sage Chapel has been the center of worship for the Cornell community. In that year an endowment fund was established by the Dean Sage family for the purpose of bringing religious leaders and speakers to the Chapel. This fund was later augmented by the Thorp family. Outstanding clergymen and laymen—Protestant, Catholic, Jewish, and those from other religious traditions—preach in Sage Chapel during the academic year. Also, directors and chaplains of Cornell United Religious Work lead the services each week and preach from time to time throughout the year. During the Summer Session period a similar series is provided in the Chapel at 11:00 A.M. on the six Sundays, July 5–August 9 inclusive. Information about other religious services on campus and in Ithaca may be obtained in the *Weekly Bulletin* or by calling 256-4214.

Cornell United Religious Work

CURW serves as a nonacademic division of religious affairs in the University, with offices in Anabel Taylor Hall. The united program was founded in 1869 and took its present name in 1929 as an interreligious organization. University chaplains, representing major religious faiths, provide leadership, counseling, and opportunities for worship, study, and service in the various traditions. In addition, they work closely with the CURW directors and board in developing an extensive and flexible program of projects, conferences, lectures and noncredit courses which are open to all without regard to religious affiliation.

THE COMMONS. A coffeehouse facility in Anabel Taylor Hall is open each evening except Sunday during Summer Session. It is an art-form center and also contains a small library in contemporary theology. Films, folk-singing, poetry reading, and related programs are part of the informal fare between 8:00 and 11:00 P.M., Monday through Thursday, and from 8:00 until 12:00 P.M. on Friday and Saturday.

SUMMER SESSION CHOIR

Music for the Sage Chapel services is provided by the Summer Session Choir and by the University Organist (Professor Donald R. M. Paterson). The Choir rehearses in Sage Chapel on Tuesday evenings at 7:15 P.M. and on Sunday mornings at 9:30 A.M. The first rehearsal will be held on Sunday, July 5. All students and interested persons are invited to participate.

During the two-week Choral Music Program, which is part of the Summer Arts Festival, the Summer Session Choir will be joined by the participants of the choral music group. For further information on the Choral Music Program and the Summer Arts Festival, see pp. C-1-C-8.

PUBLIC LECTURES

A wide variety of lectures is available to all students in the Summer Session as well as to members of the University community at large. The Summer Session itself sponsors a series of weekly lectures on topics of general interest. The student union, Willard Straight Hall, also sponsors a general interest series as does the Commons in Anabel Taylor Hall. In addition various departments such as physics, sponsors lectures of more specialized interest. As a result there is usually a choice of four or five lectures in a typical week during the Summer Session period.

SUMMER THEATRE

The summer program of the Department of Theatre Arts is part of the offerings of the Summer Arts Festival. For information on the productions to be presented and courses available, see pp. C-6-C-8.

ART EXHIBITIONS

Andrew Dickson White Museum of Art

Cornell's Museum of Art continues to present a program of temporary exhibitions in addition to housing the University art collections.

During the summer of 1970 several loan exhibitions will be featured. Also on view will be selections from the Museum's Asian, contemporary, and graphic arts collections.

The major exhibition will be "Artists at Cornell—Summer 1970," featuring painting and sculpture by the faculty of Cornell's active summer art program. Included will be works by Steve Poleskie, Arnold

Singer, Norman Daly, Friedl Dzubas, John Bosson, Robert Mangold, and Jeffrey Poklen.

In the summer the Museum is open daily except Monday from 11:00 A.M. to 4:30 P.M. and on Sunday from 1:00 to 4:30 P.M.

Van Rensselaer Art Gallery

Student work from design courses in the Department of Design and Environmental Analysis is shown during the summer in Van Rensselaer Art Gallery (room 317). Students, faculty, and visitors are cordially invited to visit the exhibit.

Gallery hours are 9:00 A.M. to 5:00 P.M. Monday through Friday.

SPORTS

Softball diamonds on Upper Alumni Field, tennis courts conveniently situated around the campus, and the eighteen-hole University golf course on Warren Road are available for the use of Summer Session students. A gorge at one end of Beebe Lake on the campus forms a natural swimming pool where two guards are on duty every day of the six-week session from 1:00 to 8:30 P.M.

Private lessons in golf, tennis, and swimming, and an intramural softball league are sponsored by the Department of Physical Education and Athletics.

The gymnasium in Teagle Hall offers facilities to male students for basketball, volleyball, and general workouts Monday through Friday from 9:00 A.M. to 5:00 P.M. Presentation of the official Summer Session Registration Certificate is required for admittance.

Women students may use the gymnasium in Helen Newman Hall from 1:00 to 5:00 P.M. Monday through Friday. Equipment is available for badminton, basketball, and volleyball. Students must furnish their own gymnasium shoes.

Grumman Squash Courts

Facilities for squash and handball are available daily to male students. Participants must furnish their own game equipment. Presentation of the official Summer Session Registration Certificate is required for admittance.

Swimming

Swimming facilities in Teagle Hall pool will be available for male students Monday through Friday each week from 12:00 M. to 2:00 P.M. Students will be admitted upon presentation of the official Summer Session Registration Certificate. A towel may be obtained upon presentation of the Registration Certificate.

Women students may use the Helen Newman pool from 1:00 to 2:00 P.M. and from 3:00 to 5:00 P.M., Monday through Friday. Towels and

suits are provided, but students must furnish their own bathing caps. From 3:00 to 5:00 P.M. a woman student may be accompanied by a male guest.

Intramural Softball League

Groups or individuals who wish to participate in softball competition should see Mr. Peter Carhart, 256-4065.

Private Lessons

The Department of Physical Education and Athletics sponsors private lessons in golf, tennis, and swimming.

Tennis: Hours to be arranged. Call Mr. Alf Ekman, 256-3653 or 272-8303.

Golf: Hours and instructor in charge to be announced. Call Mr. George Hall at the University Golf Course, 256-3361.

Swimming: Hours to be arranged. See Mr. Peter Carhart at Teagle Hall or call 256-4065.

Sports-Fitness School for Boys

Boys, seven to fourteen years of age, will be given an opportunity to take part in the Cornell Sports-Fitness School. It will be operated for five weeks, beginning June 29 and ending July 31, on the University athletic fields and at Teagle pool. The program is directed by Cornell swimming coach, Peter S. Carhart. A fee will be charged. Applications may be obtained at the Physical Education office in Teagle Hall.

Summer-Ithaca

A nonprofit community organization, staffed by volunteers and beginning its tenth year of service to the community, Summer-Ithaca seeks to encourage the performing and visual arts for the entertainment, recreation, and participation of residents and visitors during the summer months.

A calendar of varied events of interest to residents and visitors is published and distributed free of charge by Summer-Ithaca and the Ithaca Chamber of Commerce. Cornell University cooperates in developing this program of events. The scope of activities includes theatre, concerts, lectures, films, exhibits, and recreation, designed to appeal to a wide range of ages and interests. All events, many without charge, are open to Summer Session students and add to the attractiveness of summer in Ithaca.

Anyone interested in participating or contributing to any of these programs is asked to contact Mr. Jerry Schickel, 273-7203.

SCHEDULE OF COURSES

Course offerings of the Summer Session are organized and described on the following pages under three classifications: the Eight-week Session, the Six-week Session, and Special Programs, with cross reference to those offerings which apply to more than one classification.

The courses of instruction are listed alphabetically by department with few exceptions. For offerings in particular subject fields consult the Index.

Because of demands that may be placed upon the instructing staff, it is occasionally necessary to substitute an instructor for one named in the course descriptions. Changes in instructors prior to registration will be listed in the *Supplementary Announcement*, which is distributed to students on registration day.

The director reserves the right to cancel any course for which, through unforeseen circumstances, satisfactory instruction cannot be provided.

UNIT COURSES, those of less than six weeks in length, are indicated by a *u* following the course number, and their dates are given in the course descriptions. (See p. 13 for tuition charges.)

COURSES REQUIRING LABORATORY OR OTHER FEES are marked by an asterisk (*). The course fee usually appears at the end of the course description.

CLASS SCHEDULES. For most courses, classes will meet five times a week, Monday through Friday, with no classes on Saturdays, for the period of the session or special program. The hours of class meetings are contained in the course descriptions. Courses in the eight-week session normally meet for fifty minutes daily. Courses in the six-week session normally meet for seventy-five minutes daily except those carrying two credit hours. They meet for fifty minutes daily.

MEETING PLACES of courses are given in the course descriptions. Any additions or changes in room assignments will be listed in the *Supplementary Announcement*, which is distributed to students on registration day.

EXAMINATIONS. With a few exceptions, final examinations for all courses in the eight-week and six-week sessions will be held on Thursday, August 13, and Friday, August 14, at the hours indicated by the schedule on p. 28. The usual classrooms will be used unless a change is announced by the instructor.

Deviations from the schedule on p. 28 will be permitted only if all class members and the instructor agree on the change and it has been determined that no student in the class has a conflict in time. The Summer Session office should receive notification of any changes in schedules.

In courses in which no examination is to be given, an announcement to that effect will be made by the instructor. In those cases, the last meeting of the class will be held at the time normally scheduled for the examination.

28 SCHEDULE OF COURSES

EXAMINATIONS WILL BE HELD AS FOLLOWS:

8:00 A.M. classes, Thursday at 8:00

9:00 and 9:30 A.M. classes, Friday at 8:00

10:00 A.M. classes, Thursday at 10:30

11:00 and 11:30 A.M. classes, Thursday at 2:00

12:00, 12:30, and 1:00 P.M. classes, Friday at 10:30

1:40 and 2:00 P.M. classes, Friday at 2:00

EXCEPTIONS. For all unit courses in either half of the eight- or six-week sessions, the final examinations will be on Friday.

EIGHT-WEEK SESSION

June 22—August 14

Any student registering in the eight-week session may enroll in courses in the six-week session providing there is no conflict in the time schedule of classes. Students taking courses in both sessions will register for their *entire* program on *Monday, June 22*, the eight-week registration day. Each student must report to room 117, Ives Hall, at a time during the day which will not conflict with attendance in the first class meeting of any course in his program, and between the hours of 8:30 A.M. to 4:30 P.M.

For other general information, see pp. 5-28.

BIOLOGICAL SCIENCES

Ornithology

*Biol. Sci. 472. ORNITHOLOGY (U,G)

Four hours credit. Enrollment limited to twenty students. Prerequisites, some preparation in vertebrate biology and concurrent registration in Biological Sciences 571. Lectures and laboratories M T W Th F 8-12. Fernow 210. Will include overnight, all-day, and half-day field trips. Mr. Weisbrod.

Lecture topics will cover various aspects of avian biology including adaptations, behavior, ecology, morphology, and systematics; and will be integrated with laboratory and field exercises where appropriate. Knowledge of the orders, North American families, and New York species will be stressed in laboratory sessions. Field work will emphasize the identification of species and an understanding of basic techniques employed in field research. All topics will be presented in terms of modern evolutionary theory. Fee, \$20.

Biol. Sci. 571. ADVANCED TOPICS IN VERTEBRATE BIOLOGY (U,G)

Two hours credit. Enrollment limited to twenty students. Prerequisite, concurrent registration in Biological Science 472. Time and place of class meetings to be arranged. Mr. Weisbrod.

Sessions on selected topics of avian ecology, behavior, and systematics with an emphasis on review of current literature in conjunction with field research projects on local species.

For other listings of the Division, see pp. 34-35.

ENGINEERING

Electrical Engineering

Eng. 242. ELECTRICAL SCIENCE II (U)

Three hours credit. Prerequisite, Eng. 241. Lectures M T W Th F 10 A.M. and W 7:30-10 P.M. or S 9 A.M.-12 M., if there are no conflicts. Phillips 219.

An introduction to modern electrical engineering. Simple models are developed for a wide variety of electrical devices, and interactions between several devices are considered. Analytical and graphical techniques for calculating

30 HUMAN NUTRITION AND FOOD

responses to various excitations of simple electrical systems containing these devices are included. Indicative of the types of systems considered are: networks of linear resistances and capacitances subjected to steady and sinusoidal excitations; circuits of triode and transistor amplifiers; inductive systems, both linear and nonlinear, such as transformers and elementary electromechanical transducers; and simple distributed systems such as transmission line and resonators. Throughout the course, emphasis is placed upon the physical principles underlying system behavior.

Engineering Cooperative Program Summer Term

See Special Programs of the Summer Session, p. 71.

Engineering Short Courses

See Special Programs of the Summer Session, pp. 71 to 74.

Materials Science and Engineering

Eng. 6211. MATERIALS SCIENCE (U)

Three hours credit. Prerequisite, Eng. 6210 or its equivalent. Lectures M T W Th F 9-9:50 A.M., Bard 140. Laboratory W 2-4:30 P.M. and M 7:30-10 P.M.; or S 9 A.M.-12 M, if there are no conflicts. Kimball 215.

Kinetics: Reaction rates in gases and condensed systems; atomic and ionic transport processes; kinetics of phase transformation.

Properties: Mechanical, electrical, and magnetic properties of materials with emphasis on structure-sensitive properties.

Theoretical and Applied Mechanics

Eng. 212. MECHANICS OF RIGID AND DEFORMABLE BODIES II. (U)

Four hours credit. Prerequisite, Eng. 211 or its equivalent. Lectures and recitations M T W Th F 11; computing-laboratory M Th 2-4:30. Thurston 202.

Inelastic behavior. Energy methods in mechanics. Principles of particle dynamics. Theory of oscillations. Kinematics of rigid body motion. Dynamics of systems of particles. Kinetics of rigid bodies. Text: Shames *Engineering Mechanics*, 2d ed.

HUMAN NUTRITION AND FOOD

HNF 500. SPECIAL PROBLEMS FOR GRADUATE STUDENTS (G)

Credit and hours to be arranged. Department faculty. For graduate students recommended by their chairmen and approved by the instructor in charge for independent, advanced work. Experience in research laboratories in the department may be arranged.

HNF 599. MASTER'S THESIS AND RESEARCH (G)

Credit and hours to be arranged. S/U grades optional. Registration with permission of the instructor. Misses Armbruster, Hester, Mondy, Morrison, Newman, Rivers, Schwartz, and Young. Mrs. Devine, Mrs. Roe, and Mrs. Snook; Mr. Lutwak.

HNF 699. DOCTOR'S THESIS AND RESEARCH (G)

Credit and hours to be arranged. S/U grades optional. Registration with permission of the instructor. Misses Armbruster, Hester, Mondy, Morrison, Newman, Rivers, Schwartz, and Young. Mrs. Devine, Mrs. Roe, and Mrs. Snook; Mr. Lutwak.

(Students may also register for these courses in the six-week session. See pp. 48-49.)

MATHEMATICS**Math. 192. CALCULUS FOR ENGINEERS (U)**

Four hours credit. Prerequisite, Math. 191 or its equivalent. M T W Th F 8-9:15. White 310. Mr. West.

Transcendental functions, technique of integration and multiple integrals, vector calculus, analytic geometry in space, partial differentiation, applications. Text: Thomas, *Calculus and Analytic Geometry*, chaps. 7-15.

Math. 294. ENGINEERING MATHEMATICS (U)

Three hours credit. Prerequisite, Math. 293. M T W Th F 8-8:50. White B-29. Mr. Eisenberg.

Linear differential equations, quadratic forms and eigenvalues, differential vector calculus, applications. Text: Block, Cranch, Hilton, Walker, *Engineering Mathematics*, vol. 2.

For other listings of the Department, see pp. 49-51.

PHYSICS***Physics 122. INTRODUCTORY ANALYTICAL PHYSICS II (U)**

Three hours credit. Prerequisites, Physics 121 and at least simultaneous registration in Math 192, or consent of the instructor. Lectures, T Th 9:30-10:45. Rockefeller A. Recitations, M W F 9:30-10:45. Rockefeller 103. Laboratory, T 2-5. Rockefeller 252. Mr. Newhall.

Rotation of rigid bodies. Simple harmonic motion. The properties of the fundamental forces: gravitational, electromagnetic, and nuclear. At the level of *Physics*, Parts I and II by Resnick and Halliday. Fee, \$5.

Physics 234. INTRODUCTORY ANALYTICAL PHYSICS IV (U)

Three hours credit. Prerequisites, Physics 233 and at least simultaneous registration in Math 294, or consent of the instructor. Lectures, W F 12-12:50. Rockefeller A. Recitations, M T Th S 12-12:50. Rockefeller 104. Mr. Littauer.

Modes of oscillation, waves, polarization, interference and diffraction. Selected topics from contemporary physics such as relativity, quantum effects, atomic and x-ray spectra, nuclear structure and reactions, and solid state physics. At the level of *Fundamentals of Optics and Modern Physics*, 1968, by Young.

***Physics 236. LABORATORY TO ACCOMPANY PHYSICS 234 (U)**

One hour credit. Prerequisite, Physics 235 and coregistration in Physics 234, or consent of the instructor. T F 2-5. Rockefeller 30. Mr. Lee.

Experiments in optics and contemporary physics. Fee, \$5.

***Physics 500. INFORMAL GRADUATE LABORATORY (G)**

One to three hours credit. Prerequisites, Physics 236, 310 or 360, and a junior-senior course in contemporary physics (e.g., Physics 436), or consent of the instructor. Laboratory open M T W Th F 2-5. Clark 308. Mr. Browman and staff.

This laboratory is associated with the Physics 510 laboratory; see topics in Physics 510. Fee, \$5. per credit hour.

***Physics 510. ADVANCED EXPERIMENTAL PHYSICS (G)**

Three hours credit. Prerequisites, Physics 410 or 500, and 443, or consent of the instructor. M T W Th F 2-5. Clark 308. Mr. Browman and staff.

About seventy different experiments are available among the subjects of mechanics, acoustics, optics, spectroscopy, electrical circuits, electronics and ionics, heat, x rays, crystal structure, solid state, cosmic rays, and nuclear physics. The student is expected to perform about five or six experiments, selected to meet his individual needs. Stress is laid on independent work. Fee, \$15.

Physics 574. INTERMEDIATE QUANTUM MECHANICS (G)

Four hours credit. Prerequisites, Physics 562, 572, and Math 416, or consent of the instructor. M T W Th F 11-12:15. Rockefeller 103. Two additional hours each week to be arranged. Mr. Salpeter.

Discussion of various applications of quantum mechanics such as collision theory, theory of spectra of atoms and molecules, theory of solids, emission of radiation, and relativistic quantum mechanics. At the level of *Quantum Mechanics of One- and Two-Electron Atoms* by Bethe and Salpeter.

The names listed as faculty for the above physics courses are not necessarily instructors of these courses for the summer. They are advisers to whom you may direct questions concerning prerequisites, etc., for the courses. Names of the instructors will be available on registration day.

For other offerings of the Department, see pp. 55-56; and also Special Programs, p. 63.

SIX-WEEK SESSION

July 1—August 14

For registration procedures and other information, see pp. 5-28.

Students admitted to this session may elect a course from among the Special Programs, listed on pp. 62 to 80, if granted permission by the program director and if there is no conflict in the time schedule of classes. Tuition for such courses is at the rate charged in the six-week session.

AGRICULTURAL EDUCATION

(See pp. 63-65.)

AGRICULTURAL ENGINEERING

(See p. 63.)

AGRICULTURAL ORIENTATION

Ag. Orient. 110. INTRODUCTORY COLLEGE MATHEMATICS (U)

Four hours credit. Enrollment limited to thirty-five students. M T W Th F 8-9:15. Laboratories two afternoons a week, to be scheduled. Miss Cantor.

Designed to give students with a sound secondary school mathematics background, a unified treatment of the basic concepts of college algebra, trigonometry, analytic geometry, and the elements of calculus. Considerable emphasis will be placed upon the concept of function, graphing, problem solving, and methods of proof. The Cornell University Computing Language (CUPL) will be taught and used to strengthen and integrate the mathematical topics covered by this course.

ANTHROPOLOGY

Anthro. 101. INTRODUCTION TO CULTURAL ANTHROPOLOGY (U,G)

Three hours credit. M T W Th F 9:30-10:45. Goldwin Smith 156. Mr. Greenwood.

A comparative study of the organization of cultural behavior in systems of communications, technology, social relations, ritual, ideas, and sentiments; the relation of such systems to personal behavior and to continuity, change, and cultural transfer in history. Illustrative materials drawn largely from non-Western societies.

Anthro. 102. THE EVOLUTION OF MAN (U,G)

Three hours credit. M T W Th F 11-12:15. McGraw 303.

An exploration of the archaeological and fossil record of human evolution; emphasis is on the varied ways of uncovering, interpreting, and understanding man's biological and cultural development from the origin of man to the rise of civilization.

34 BIOLOGICAL SCIENCES

Anthro. 326. ECONOMIC ANTHROPOLOGY (U,G)

Four hours credit. M T W Th F 8-9:15. McGraw 305. Mr. Greenwood.

Data on economic systems of primitive and peasant societies and problems in the conceptualization of these data will be reviewed in terms of the "substantive," "formal," and "adaptive" approaches to economic anthropology. Attention will be given to economic change.

Anthro. 372. HUMAN BIOLOGICAL VARIATION (U,G)

Four hours credit. M T W Th F 9:30-10:45. McGraw 303. Mr. Stini.

A detailed analysis of the forces producing differences between human populations: the genetics, epidemiology, demography, and physiology, which combine to produce the variety seen in divergent peoples. A critique of the concept of race as a taxonomic category is developed as evidence generated by a number of biological disciplines is synthesized.

ARCHITECTURE

(See Special Programs, pp. 65-66.)

ART

HISTORY OF ART (see p. 46.)

SUMMER ARTS FESTIVAL (see pp. C-1-C-8)

STUDIOS IN ART (see p. C-6)

ASIAN LANGUAGE PROGRAM

(See pp. 66-67.)

BIOLOGICAL SCIENCES

*Biol. Sci. 101u. GENERAL BIOLOGY (U)

Three hours credit. *July 1 to July 24.* Registration permitted only to students who also register for Biol. Sci. 102u. Lectures, M T W Th F 10 and 11:15. Plant Science 233. Laboratory, M T W Th F 1:30-4:30. Roberts 392. Mrs. McFadden and staff.

Designed for students intending to specialize in some aspect of biology or biochemistry, and also for those planning to major in other subjects (such as the social sciences or the humanities) but who want to obtain a thorough knowledge of the phenomenon of life as part of their general education. Plant and animal materials are considered together rather than in separate units.

Course 101u covers cellular biology, the biochemistry of metabolism, physiology and anatomy, and behavior. Course 102u includes genetics, developmental biology, evolutionary theory, the biology of populations and communities, the origin of life, and the evolutionary patterns in the plant

and animal kingdoms. Each topic is considered in the light of modern evolutionary theory. The laboratory work is designed to give first-hand experience with the materials discussed in lecture. Fee, \$10.

***Biol. Sci. 102u. GENERAL BIOLOGY (U)**

Three hours credit. *July 27 to August 14*. A continuation of Biological Sciences 101u and open only to persons registered in Biological Sciences 101u. Time and place of class meetings same as above. Mrs. McFadden and staff.

For course description see Biological Sciences 101u. Fee, \$10.

***Biol. Sci. 262. BIOLOGY OF THE HONEY BEE (U,G)**

One hour credit. Prerequisite, first year biology course (Biological Sciences 103-104). Limited to ten students. Fifteen laboratories, two per week, plus three evening sessions to be scheduled. Caldwell Hall 272 and the Bee Laboratory. Mr. Morse.

A laboratory and field course in which the classical experiments on the vision, chemical senses, and language of the honey bee, as described by Von Frisch, are repeated. Laboratories include demonstration of the alarm odor, sex attractant, swarm orientation, and observation of the growth of a normal colony of bees both in an observation hive and a standard bee hive. In addition, the study of other social insects and their nests, including wasps, bumblebees and the semisocial solitary bees. Fee, \$4.

Biol. Sci. 361. GENERAL ECOLOGY (U,G)

Three hours credit. Prerequisites, Biological Sciences 101-102 or 103-104 or the equivalent. Lectures M T W Th F, 9:30-10:45, Comstock 145. Afternoon field trips to be arranged. Mr. A. Shapiro.

Principles concerning the interactions between organisms and their environment. Influence of competition, social behavior, predation, and other factors on population size and dispersion. Role of energy flow and mineral cycling in determining the structure and productivity of ecosystems. Succession and classification of natural communities. Influence of climate and past events on the diversity and stability of communities in different regions of the world. Interspecific competition and the niche concept. Chemical interactions between organisms. Application of ecological principles to human problems. Modern evolutionary theory will be stressed throughout and attention given to conflicting ecological hypotheses.

Biol. Sci. 431. PRINCIPLES OF BIOCHEMISTRY, LECTURES (U,G)

Four hours credit. Prerequisite, organic chemistry. M T W Th F 8-10. Riley-Robb 105. Messrs. Andersen, Donelson, and Mackie.

A basic course dealing with the chemistry of biological substances and their transformations in living organisms.

Biol. Sci. 472. Ornithology. See Eight-Week Session, p. 29.

Biol Sci. 571. Advanced Topics in Vertebrate Biology. See Eight-Week Session, p. 29.

CHEMISTRY

Students and members of the teaching staff are required to wear safety glasses or prescribed eye protective devices in all chemistry laboratories.

***Chem. 107u. GENERAL CHEMISTRY (U)**

Three hours credit. *July 1-July 24*. Prerequisite, at least two units of mathematics, and one unit or more of secondary school chemistry. Registration permitted only to students who register also for Chemistry 108u. Lectures, M T W Th F 8-9:50. Recitations, T W Th 3:30-4:30. Lectures and recitations in Baker Laboratory 135. Laboratory M T W Th F 10-1. Baker Laboratory 150.

The important chemical principles and facts are covered, with considerable attention given to the quantitative aspects and to the techniques which are important for further work in chemistry. Texts: Sienko and Plane, *Chemistry, Principles and Property*; Sienko and Plane, *Experimental Chemistry*, 3d. ed. Fee, \$7.50.

***Chem. 108u. GENERAL CHEMISTRY (U)**

Four hours credit. *July 27-August 14*. Prerequisite, Chemistry 107u or its equivalent. Lectures, M T W Th F 8-9:50. Recitations, T W Th 3:30-4:30. Lectures and recitations in Baker Laboratory 135. Laboratory, M T W Th F 10-1. Baker Laboratory 150.

A continuation of Chemistry 107u; serves as prerequisite for Chemistry 236 or Chemistry 353. The laboratory includes a simplified scheme of qualitative analysis. Texts: as listed above for Chemistry 107u. Fee, \$7.50.

Chem. 353. ELEMENTARY ORGANIC CHEMISTRY (U,G)

Four hours credit. Prerequisite, Chemistry 104 at a grade of C-, or 108 or 116, or their equivalent. Chemistry 355 must be taken concurrently with Chemistry 353. Primarily for students in the premedical and biological curricula. The student should determine the entrance requirements for the particular medical school he wishes to enter. Lectures M T W Th F 8-9:50. Baker Laboratory 119.

An integrated study of aliphatic and aromatic organic compounds, their occurrence, methods of preparation, reactions, and uses. The relationship of organic chemistry to the biological sciences is stressed. Text: *Modern Organic Chemistry*, Roberts and Caserio.

***Chem. 355. ELEMENTARY ORGANIC LABORATORY (U,G)**

Two hours credit. Must be taken with Chemistry 353. Laboratory, M T W Th F 10-1. Baker Laboratory 250.

Laboratory experiments on the preparation and reactions of typical aliphatic and aromatic organic compounds. Fee, \$15.

CITY AND REGIONAL PLANNING

(See pp. 67-69.)

CLASSICS

Greek

Greek 101u. GREEK FOR BEGINNERS (U)

Three hours credit. *July 1-July 24*. M T W Th F 8-9:15 and 11-12:15. Goldwin Smith 124. Mr. Spofford.

Introduction to Attic Greek. Designed to enable the student to read the ancient authors as soon as possible. Must be taken with Greek 103u.

Greek 103u. ATTIC GREEK (U)

Three hours credit. *July 27-August 14*. Same time schedule as Greek 101u. Mr. Spofford.

Readings from Plato. Must be registered in Greek 101u.

Latin

Latin 105u. LATIN FOR BEGINNERS (U)

Three hours credit. *July 1-July 24*. M T W Th F 8-9:15 and 11-12:15. Goldwin Smith 120-A. Mr. Harris.

An introductory course in the essentials of the Latin language designed for rapid progress toward reading the principal Latin authors. Must be taken with Latin 106u.

Latin 106u. LATIN FOR BEGINNERS (U)

Three hours credit. *July 27-August 14*. Same time schedule as Latin 105u. Mr. Harris.

Selected readings. Open only to persons registered in Latin 105u.

COMMUNITY SERVICE EDUCATION

CSE 525. REHABILITATING THE CULTURALLY DISADVANTAGED (G)

Three hours credit. M T W Th F 9:30-10:45. Van Rensselaer NG-06. Mr. Babcock.

For students and practitioners in a variety of helping professional fields, e.g., counselors, teachers, extension workers, clergy, employment interviewers. A survey and analysis of the policies and practices of the federal-state vocational rehabilitation movement highlighting those aspects pertinent to working with the culturally disadvantaged. A review of the failures and successes of contemporary action programs. Topics for discussion include the rehabilitation process; the nature of cultural disadvantage; identifying, diagnosing, and working with underprivileged persons; work adjustment and training; placement; current legislation. Successful practitioners as well as culturally disadvantaged persons serve as consultants to the course.

See also Human Ecology Unit Courses, pp. 76-77.

COMPARATIVE LITERATURE

Comp. Lit. 101. VARIETIES OF WESTERN LITERATURE (U,G)

Three hours credit. Registration limited to twenty students. M T W Th F 8-9:15. Goldwin Smith 227. Mr. Gelley.

A critical method in the reading of fiction. Informal discussion of works chosen for their historical diversity and various ways of appealing to the reader. Included will be the following: Plato, Chaucer, Cervantes, Shakespeare, Diderot, Kleist, Proust, Thomas Mann, Samuel Beckett. This list may be modified on the basis of class need and response.

38 ECONOMICS

Comp. Lit. 416. MYTH AND LITERATURE (U,G)

Four hours credit. M T W Th F 11-12:15. Goldwin Smith 227. Mrs. Siegel.

Readings in mythography, literature and criticism in the twentieth century. Emphasis will be on Yeats and Stevens.

Comp. Lit. 470. DOSTOEVSKY, MANN AND GIDE (U,G)

Four hours credit. M T W Th F 9:30-10:45. Goldwin Smith 227. Mr. Holdheim.

The development of the novel form and of certain important themes, as illustrated in some of the chief works of these three representative authors. *Notes from Underground*, *The Brothers Karamazov*, *The Magic Mountain*, *Death in Venice*, and *The Counterfeiters* will be discussed.

See also German Literature, p. 45.

CONSERVATION

NATURAL RESOURCES INSTITUTE. See pp. 64-65.

INTRODUCTORY PROGRAM IN FIELD ECOLOGY. See p. 74.

CORNELL ALUMNI UNIVERSITY

See pp. 69-70.

ECONOMICS

Econ. 101. MODERN ECONOMIC SOCIETY (U)

Three hours credit. M T W Th F 8-9:15. Goldwin Smith 225.

Concentration on the determinants of aggregate economic activity. Main areas studied are the monetary and banking systems, the composition and fluctuations of national income, the major determinants of economic growth—all as influenced by monetary, fiscal, and other policies.

Econ. 102. MODERN ECONOMIC SOCIETY (U)

Three hours credit. M T W Th F 9:30-10:45. Goldwin Smith 225.

A survey of the existing economic order with particular emphasis on the salient characteristics of the modern American economy. The concentration is on explaining and evaluating the operation of the price system as it is modified and influenced by private organizations and governmental policy.

Econ. 300A. SEMINAR (U,G)

Four hours credit. Prerequisite, consent of the instructor. M T W Th F 9:30-10:45. Goldwin Smith 246.

Seminar will be offered in mathematical economics.

Econ. 300B. SEMINAR (U,G)

Four hours credit. Prerequisite, consent of the instructor. M T W Th F 11-12:15. Goldwin Smith 225.

Seminar will be offered in selected topics of current interest.

Econ. 311. INTERMEDIATE MICROECONOMIC THEORY (U,G)

Four hours credit. Prerequisite, 102 or its equivalent. M T W Th F 11-12:15. Goldwin Smith 264.

Analysis of the pricing processes in a private enterprise economy under varying competitive conditions and their role in the allocation of resources and the functional distribution of national income.

Econ. 312. INTERMEDIATE MACROECONOMIC ANALYSIS (U,G)

Four hours credit. Prerequisite, Economics 101 or its equivalent. M T W Th F 9:30-10:45. Goldwin Smith 264.

An introduction to the theory of national income determination and economic growth in alternative models of the national economy; the interaction and relation of aspects of these models to empirical aggregate economic analyses.

Economic History of the United States since 1890. See Hist. 480, p. 48.

EDUCATION

The following program is presented to serve public and private school personnel and other persons interested in professional preparation and improvement.

***Ed. 406. FIELD NATURAL HISTORY (U,G)**

Three hours credit. Lectures T and Th 1:40-3. East Roberts 223. Laboratory T and Th 3-5:30. Stone 7.

Devoted to studies of local plants, animals, and the biological and physical environment including ecology and relations to humans. Applications to teaching science and conservation are emphasized. Fee, \$1.

Ed. 417. PSYCHOLOGY OF ADOLESCENCE (U,G)

Three hours credit. Prerequisite, an introductory course in psychology or its equivalent. M T W Th F 9:30-10:45. Warren 101. Mr. Treffinger.

A survey of the nature of adolescent growth and development with emphasis on some of the causal factors pertaining to education of adolescents. May be applied toward certification of secondary school teachers and guidance counselors.

Ed. 445u. TEACHING READING AND STUDY SKILLS IN THE SECONDARY SCHOOLS (U,G)

Three hours credit. *July 1 to July 24.* M T W Th F 9:30-12. Warren 102. Mr. Pauk.

For teachers, administrators, guidance counselors, and supervisors. Pertinent research as well as the psychology and philosophy of developmental reading and study skills will be examined. Teaching methods and sample materials for classroom use will be demonstrated and discussed.

Ed. 470. EDUCATIONAL ISSUES IN A DEMOCRACY (U,G)

Three hours credit. M T W Th F 9:30-10:45. Warren 160. Mr. Crittenden.

A consideration of persistent and significant educational issues facing American society and pertinent to the work of the teacher.

Ed. 473. CONTEMPORARY PHILOSOPHY OF EDUCATION (U,G)

Three hours credit. M T W Th F 11-12:15. Warren 160.

The problem of how knowledge is organized. Methods for analyzing knowledge claims of any discipline.

Ed. 499. INFORMAL STUDY IN EDUCATION (U,G)

Maximum credit, three hours. Members of the staff.

The privilege of informal study is granted to a qualified junior, senior, or graduate student, when approved by an adviser from the Department of Education staff who is personally responsible for the study. Two purposes are sanctioned: (1) to engage in a study of a problem or topic not covered in a regular course; (2) to undertake tutorial or honors study of an independent nature in the area of the student's research interests. The program is not designed as a supplement to a regular course for the purpose of increasing the content and credit allocation of that course.

Ed. 500. SPECIAL STUDIES (G)

Credit as arranged. Members of the staff.

Limited to graduate students working on theses or other research projects. Each registration must be approved by a staff member who will assume responsibility for the work.

Ed. 511. EDUCATIONAL PSYCHOLOGY (U,G)

Three hours credit. Prerequisite, an introductory course in psychology, or its equivalent. M T W Th F 11-12:15. Warren 101. Mr. Treffinger.

Includes consideration of basic theoretical issues and relevant evidence in respect to learning, perception, cognition, motivation, ability structure, and attitudes. Trends in theory and research will be the focal points for reading and class discussion.

Ed. 555. USE AND INTERPRETATION OF TESTS IN GUIDANCE AND PERSONNEL ADMINISTRATION (G)

Three hours credit. M T W Th F 8-8:50, third hour to be arranged. Warren 160. Mr. Andrus.

Open to students in guidance or personnel administration and to classroom teachers who expect to work with standardized group tests. Deals with the historical development, use, and interpretation of aptitude tests as a basis for guidance and selection in public schools, colleges, and/or industry. Designed to meet the New York State certification requirement for guidance counselors.

Ed. 561. THEORY AND PRACTICE OF ADMINISTRATION (G)

Three hours credit. M T W Th F 9:30-10:45. Warren 260. Mr. Hickcox.

The course is keyed to concepts and research findings in the social and behavioral sciences that are basic to the administration of educational organizations. Institutional and individual problems are analyzed from the viewpoint of organizational dilemmas and role conflict. Course concepts are utilized in the analysis and discussion of cases. Attention is directed to the principles of complex organizations, interpersonal relations, and sociocultural phenomena which impinge upon the educational institution and its administration.

Ed. 582. EDUCATIONAL AND VOCATIONAL GUIDANCE (G)

Two hours credit. M T W Th F 12:30-1:20. Warren 261. Mr. Bresee.

An introductory survey course which deals with the theory and practice of guidance in public schools. Designed to meet the needs of teachers, administrators, and prospective counselors. Required for provisional certification in guidance.

Ed. 583. COUNSELING (G)

Two hours credit. M T W Th F 9:30-10:20. Warren 261. Mr. Bresee.

Principles and techniques of counseling with individuals concerning various types of educational, vocational, and social adjustment problems. Case studies.

Ed. 585. OCCUPATIONAL AND EDUCATIONAL INFORMATION (G)

Four hours credit. M T W Th F 11-11:50. Bradfield 105. Additional hour to be arranged. Field trips and workshop periods, T and Th 2-4:15. Bradfield 105. Mrs. Yanuzzi.

Survey and appraisal of occupations and training opportunities. Study of sources of educational and vocational information, job analysis, vocational trends. Field trips to places of employment.

Ed. 645. SEMINAR IN CURRICULUM THEORY AND RESEARCH (G)

Three hours credit. M T W Th F 1:15-2:30. Warren 160. Mr. Crittenden.

A discussion of broad theoretical issues affecting the design and use of a curriculum for general (or liberal) education. Aspects of the following topics will be included: aims of education and uses of schooling; varieties of knowledge and learning experience; structure in bodies of knowledge and modes of inquiry; logical and psychological order in teaching and learning; individual and social needs; values in curriculum decision making; liberal education in a technological society.

Ed. 668. SEMINAR IN EDUCATIONAL ADMINISTRATION (G)

Three hours credit. M T W Th F 11-12:15. Rice 101. Mr. Hickcox.

This seminar will focus on current research on teachers, and the teaching role, and its implications for educational administrators. Consideration will be given to career processes, teacher interaction, rewards and costs in the profession, socialization, and the implications of these topics for educational change.

Ed. 670. SEMINAR IN THE COLLEGE AND UNIVERSITY (G)

Three hours credit. M T W Th F 11-12:15. Warren 261.

Conditions of disciplined inquiry in higher education.

READING AND STUDY SKILLS

*Ed. 7u. COLLEGE READING AND STUDY SKILLS (U,G)

Noncredit. July 6 to August 6. M W F 1:30-3. Reading-Study Center, Olin 304. Mr. Houser.

The aim is the improvement of reading and study skills. In the area of *reading*, students learn to improve both their reading speed and comprehension. Students are taught how to read selectively; how to distinguish main ideas from supporting material; how to determine an author's thesis and tone; and how to comprehend scholarly and technical material. As part of their training in speed reading, students will have the opportunity to work daily with the reading accelerators in the Reading Laboratory.

Students will also receive instruction in the basic *study skills* which are essential for efficient and effective study. Topics covered will be efficient planning and use of time, recording and remembering lecture notes, preparing for and taking examinations, research procedures and techniques, and marking textbooks and taking notes on readings.

Students must register for this course during regular registration. A fee of \$75 will be payable at that time (plus the General Fee of \$5 per week required of all Summer Session students. See Fees, p. 13.)

For additional information, address Mr. Walter Pauk, Director, Reading-Study Center, 304 Olin Hall, Cornell University, Ithaca, New York 14850.

ADDITIONAL COURSES AND PROGRAMS FOR TEACHERS

Other courses of interest to those in the field of education:

- CE&PP. 263u. Consumer Education in Inner-City Programs (p. 77)
- CSE. 480u. Teaching Home Economics at the Secondary Level (pp. 76-77)
- CSE. 516u. Participation Training Laboratory (p. 77)
- CSE. 525. Rehabilitating the Culturally Disadvantaged (p. 37)
- CSE. 585u. Workshop: Development of Curriculum Modules (p. 77)
- Ed. 433u. Special Problems in Agricultural Education (p. 64)
- Ed. 532u. Methods and Materials of Teaching Agriculture (p. 64)
- Ed. 587u. Practicum in Measurement and Appraisal for Counselors (p. 75)
- Ed. 588u. Case Studies in Counseling (pp. 75-76)
- Ed. 630u. Seminar in Agricultural Education (p. 64)
- HD&FS. 115. The Development of Human Behavior (p. 48)
- Listings under Psychology (pp. 56-59) and Sociology (p. 60)

Special programs of interest to teachers:

- Agricultural Education Summer Program (pp. 63-65)
- Human Ecology Unit Courses (pp. 76-77)
- Institute in Earth and Space Science (pp. 70-71)
- Natural Resources Institute (pp. 64-65)
- Shell Merit Fellowship (p. 80)
- Unit Courses in Guidance (pp. 75-76)

Guidance courses tentatively scheduled for the Summer Session of 1971:

- Educational and Vocational Guidance
- Group Techniques in Guidance
- Organization and Administration of Guidance Programs

ENGLISH

Engl. 237. THE READING OF FICTION (U)

Three hours credit. M T W Th F 9:30-10:45. Goldwin Smith 248. Mr. Marcus.

A close study of prose fiction, emphasizing interrelation of form and meaning and the aesthetic and philosophical implications of the genre. In addition to short stories, at least one novel will be read. Texts will be selected from among such writers as Hawthorne, Hardy, Conrad, Lawrence, Virginia Woolf, and Flannery O'Connor. Reports and short papers.

Engl. 239. THE READING OF POETRY (U)

Three hours credit. M T W Th F 8-9:15. Goldwin Smith 236. Mr. Curtis.

An intensive study of British and American poems by both modern and earlier writers, designed to increase subtlety and facility in explication. Particular attention will be given to the major component parts of a poem (such as structure and tone). Various critical approaches to poetry will be examined and evaluated.

Engl. 248. LITERATURE OF THE NEGRO EXPERIENCE IN AMERICA (U)

Three hours credit. M T W Th F 3-4:15. Goldwin Smith 248. Mr. McConnell.

Examination of selected works by writers such as Douglass, DuBois, Hughes,

Wright, Baldwin, Ellison, Malcolm X, and LeRoi Jones. Assessment of forms and technique will be supplemented by close attention to such thematic concerns as responses to white society, definitions of freedom and liberation, and the emerging sense of black pride and self-identity.

Engl. 303. CREATIVE WRITING WORKSHOP: EXPLORATIONS (U,G)

Four hours credit. Limited to twenty students. M T W Th F 11-12:15.

Goldwin Smith 248. Mr. States.

A workshop for the development of talent and skills in the art forms of writing. Explorations for the bases of literary aesthetics. Practice in writing poetry, prose fiction, and allied kinds of writing. Participants will submit their own work for analysis in group discussions and in conferences.

See also Summer Arts Festival, pp. C-2-C-3.

Engl. 317. THE ROMANTIC AGE (U,G)

Four hours credit. M T W Th F 1:30-2:45. Goldwin Smith 248. Mr. McConnell.

Major poems of Blake, Wordsworth, Coleridge, Keats, and Shelley. A study of central themes and procedures in Romantic poetry.

Engl. 330. MAJOR AMERICAN WRITERS SINCE THE CIVIL WAR (U,G)

Four hours credit. M T W Th F 11-12:15. Goldwin Smith 236. Mr. Bishop.

A survey of significant American writing from the middle of the nineteenth century to the beginning of the modern period, including the poetry of Whitman, Dickinson, and T. S. Eliot, and such novels as Henry James's *Bostonians*, Howells' *A Hazard of New Fortunes*, and Dreiser's *Sister Carrie*.

Engl. 346. MODERN DRAMA FROM IBSEN TO THE PRESENT (U,G)

Four hours credit. M T W Th F 9:30-10:45. Goldwin Smith 162. Mr. Fogel.

A study of the art and contemporary relevance of the major playwrights from the 1880s to the 1960s, including Ibsen, Chekhov, Strindberg, O'Casey, O'Neill, Miller, Genet, Beckett, and Ionesco; also Van Hallie and other playwrights of the 1960s.

Engl. 368. CHARACTER AND IDENTITY IN THE TRAGEDIES OF SHAKESPEARE (U,G)

Four hours credit. M T W Th F 11-12:15. Goldwin Smith 162. Mr. Fogel.

A study of how Shakespeare, in his evolution as a tragic artist, brings into ever sharper focus the problematic character of the hero and the question of his identity. The relation of such concerns to the design of the play and to Renaissance and modern philosophies of man. Special emphasis on Hamlet, Othello, Lear, Antony, and Coriolanus, with collateral study of tragic heroes in such dramatists as Chapman and Webster.

Engl. 373. THE AMERICAN POLITICAL NOVEL (U,G)

Four hours credit. M T W Th F 1:30-2:45. Goldwin Smith 160. Mr. Strout.

A study of the American political novel in its historical context and as a literary form. Readings in Cooper, DeForest, Henry Adams, Dos Passos, Steinbeck, Hemingway, Cozzens, Warren, and others.

Engl. 385. ADVANCED FICTION WORKSHOP (U,G)

Four hours credit. Limited to twenty students. M T W Th F 1:30-2:45.

Goldwin Smith 236. Mr. Sukenick.

An intensive workshop for writers of narrative, of short stories, novels, and

44 GEOLOGICAL SCIENCES

allied forms, who are in need of specialized development beyond the exploratory stages of creative writing. Participants will submit their own work for analysis in group discussions and in conferences.

See also Summer Arts Festival, pp. C-2-C-3.

Engl. 387. ADVANCED POETRY WORKSHOP (U,G)

Four hours credit. Limited to twenty students. M T W Th F 3-4:15. Goldwin Smith 236. Mr. Matthews.

An intensive workshop for poets in need of specialized development beyond the exploratory stages of creative writing. Participants will submit their own work for analysis in group discussions and in conferences.

See also Summer Arts Festival, pp. C-2-C-3.

Engl. 417. SEVENTEENTH-CENTURY POETRY: THE METAPHYSICAL TRADITION (U,G)

Four hours credit. M T W Th F 9:30-10:45. Goldwin Smith 236. Mr. Ralph Williams.

Close reading of the major poetic texts. The emphasis will be on Donne, Herbert, and Marvell, but attention will also be given to such poets as Crashaw, Vaughan, Traherne, Cowley, and Taylor.

Engl. 461. STUDIES IN MODERN FICTION (U,G)

Four hours credit. M T W Th F 8-9:15. Goldwin Smith 248. Mr. Sukenick.

A survey of the modern English and American novel, with particular attention to post-World War II writers and the way their narrative styles reflect and produce distinctive imaginative worlds. Readings in such authors as Stein, Hemingway, Lowry, Mailer, Burroughs, Barth, Malamud, Durrell, and Pynchon.

Engl. 466. MODERN IRISH LITERATURE (U,G)

Four hours credit. M T W Th F 3-4:15. Goldwin Smith 160. Mr. Marcus.

A study of the "Irish Renaissance," with emphasis on Yeats, Joyce, Synge and O'Casey. The topic will provide opportunity for the exploration of problems concerning "influences" and the nature of literary movements. In addition to literary analysis; political, social and historical perspectives will be considered.

ENGLISH AS A SECOND LANGUAGE. (See p. 53.)

GEOLOGICAL SCIENCES

*Geol. Sci. 101u. INTRODUCTORY GEOLOGICAL SCIENCE (U)

Three hours credit. *July 1 to July 24*. Registration limited to twenty-five students. Lectures, M T W Th F 9:30-11:20. McGraw 165. Laboratory, M T W Th 1:30-4. McGraw 265. Mr. Younce and assistant.

An introduction to geological science designed to give general students a comprehensive understanding of earth materials, processes, features, and history. Field trips during certain laboratory periods. Text: *Geology 101 Laboratory Manual*. Fee, \$10.

*Geol. Sci. 102u. INTRODUCTORY GEOLOGICAL SCIENCE (U)

Three hours credit. *July 27 to August 14*. Registration limited to twenty-five students. Prerequisite, Geol. Sci. 101u or its equivalent. Lectures, M T W

Th F 9:30-11:20. McGraw 165. Laboratory, M T W Th 1:30-4. McGraw 265. Mr. Younce and assistant.

Continuation of Geological Science 101u, the last half of the course being devoted to the principles of interpretation of earth history, evolution of continents, oceans, mountain systems, and other features, and development of organic life. Field trips during certain laboratory periods. Text: *Historical Geology*, Dunbar, and *Geology 102 Laboratory Manual*. Fee, \$10.

GERMAN LITERATURE

Germ. Lit. 412. THE PLAYS OF BERTOLT BRECHT (in translation) (U,G) Four hours credit. M T W Th F 9:30-10:45. Goldwin Smith 120-A. Mr. Connor.

A close study of Brecht's major plays from various periods of his life.

RESEARCH SEMINAR IN MODERN GERMAN HISTORY. See Hist. 456, p. 47.

Cornell German Program in Heidelberg

See pp. 74-75.

GOVERNMENT

Gov. 101. AMERICAN GOVERNMENT (U,G)

Three hours credit. M T W Th F 9:30-10:45. West Sibley 101. Mr. Milnor.

A general introduction to American national government and politics. Emphasis will be placed on historical development, organization, powers, practical working, and problems of federalism.

Gov. 104. COMPARATIVE GOVERNMENT (U,G)

Three hours credit. M T W Th F 8-9:15. West Sibley 101. Mr. Simmons.

Analysis of the characteristics of contemporary political systems in the developed and underdeveloped areas of the world: factors of stability, party and electoral systems, role of ideology, predominance of executive power in the economically planned society.

Gov. 203. INTRODUCTION TO POLITICAL THEORY (U,G)

Three hours credit. M T W Th F 8-9:15. West Sibley 318. Mr. Crosby.

A survey of the development of Western political theory from Plato to the present. Readings from the work of the major theorists and an examination of the relevance of their ideas to contemporary politics will be stressed.

Gov. 313. AMERICAN CONSTITUTIONAL LAW (U,G)

Four hours credit. M T W Th F 9:30-10:45. West Sibley 318. Mr. Heberle.

Analysis of the role of the Supreme Court and of the constitutional law it expounds. The course will be conducted through lectures and discussion of assigned cases.

Gov. 318. THE AMERICAN CONGRESS (U,G)

Four hours credit. M T W Th F 11-12:15. West Sibley 318. Mr. Milnor.

An intensive study of politics and policy formation in Congress. Special

emphasis on the problems of the representative assembly in the twentieth century.

Gov. 355. AMERICAN POLITICAL THOUGHT (U,G)

Four hours credit. M T W Th F 11-12:15. West Sibley 101. Mr. Heberle.

Survey of the development of American political thought, with emphasis on the origins and uses of ideas. Other kinds of thought—constitutional, social, religious, economic, educational, cultural—are considered in their relations to political thought.

Gov. 442. POLITICAL AND ECONOMIC CHANGE IN CONTEMPORARY EUROPE (U,G)

Four hours credit. M T W Th F 9:30-10:45. West Sibley 102. Mr. Simmons.

Emphasis will be placed on the key manifestations of change since the war. The crisis of parties and of social and political institutions. New instruments of public policy. The varieties of public corporations and of planning agencies. The social and technological revolutions and private enterprise. The search for new dimensions of government: regionalism and the supranational communities.

Gov. 462. ORIGINS OF WESTERN POLITICAL THOUGHT (U,G)

Four hours credit. M T W Th F 9:30-10:45. West Sibley 309. Mr. Crosby.

A survey of the classical political teachings in their development from the pre-Socratics through Greek and Roman antiquity and in their transformation by the revealed religions.

HISTORY OF ART

Hist. of Art 202. INTRODUCTION TO RENAISSANCE AND MODERN ART (U,G)

Three hours credit. M T W Th F 11-12:15. Goldwin Smith 24. Mr. Waage.

A survey of the more important paintings and sculptures by the major artists in Europe and the United States from about A.D. 1400 to the present. Those artists will be treated who have proved to be the most pioneering and inventive and who therefore have had the greatest influence upon the subsequent course of art. The purpose is not only to make the student aware of this influence but, even more, to acquaint him with the individual styles of these masters so that he can identify their works upon sight. No practice of art is involved.

Hist. of Art 263. TWENTIETH CENTURY ART (U,G)

Three hours credit. M T W Th F 9:30-10:45. Goldwin Smith 24. Mr. Waage.

Modern art, primarily painting, from the post-Impressionists to the present. An attempt is made to explain why the modern movement of art arose in the first place; then the course of its development is traced in the works of the more talented and influential artists. Since the period under study is much shorter, a more precise and thorough treatment of the individual styles of the artists and of the formal, or aesthetic, qualities of their creations is possible than in Hist. of Art 202. No practice of art is involved.

HISTORY

Hist. 106. INTRODUCTION TO WESTERN CIVILIZATION (U,G)

Three hours credit. M T W Th F 9:30-10:45. Goldwin Smith 128. Mr. Windell.

[Continued on p. 47]



Summer Arts Festival

Cornell University

Creative Writing

Music

Studios in Art

Theatre Arts

This year the Cornell Summer Session, in cooperation with the University Council of Creative and Performing Arts, is placing new emphasis on the visual and performing arts by inaugurating the Summer Arts Festival.

The aims of the Festival are twofold: (1) to make the arts available to those who wish to participate and advance their knowledge in a particular area and (2) to provide the richest possible environment for students of the arts, the members of the community, and visitors to this area.

Three workshops in creative writing are offered by the Department of English to aspiring as well as talented authors of novels, short stories, and other types of prose and poetry. The Department of Music is offering an expanded Summer Session Concert Series, and, in addition, will conduct workshops in performance and composition.

Studios in Art, already a favorite summer offering of the Department of Art, features prominent contemporary artists from the staff of Cornell and other institutions. A course in photography has been included as part of the graphic arts agenda this summer.

The Department of Theatre Arts will provide the Cornell community with a summer season of contemporary drama presented by the Summer Repertory Theatre under the direction of the University Theatre staff. In addition, a workshop on dance and movement is available for the first time, as is the Film Production Studio, in which an actual production will be filmed on campus.

In addition to workshops and courses of study, there will be scheduled throughout the Summer Session public performances in theatre, music, and dance; exhibitions in painting, sculpture, and graphics; poetry readings by resident and visiting poets; film exhibitions; and other activities all focused on making available a full experience of the arts.

Creative Writing Workshops

OFFERED BY THE ENGLISH DEPARTMENT

As part of the Summer Arts Festival, an expanded program of workshops in creative writing is being offered by eminently qualified teachers. The program is designed for students seriously interested in writing as a career and comprises three different workshops for the development of talent and skills in writing. One workshop is of an exploratory nature and covers poetry, fiction, and other allied forms; the second is an intensive workshop for writers of narrative, short stories, novels, and other similar literary forms; the third is an advanced poetry workshop.

For additional information write to the Director, Creative Writing Workshops, B-20 Ives Hall, Cornell University, Ithaca, New York 14850.

Following are the course listings:

**Engl. 303. CREATIVE WRITING WORKSHOP:
EXPLORATIONS (U,G)**

Four hours credit. Limited to twenty students. M T W
Th F 11-12:15. Goldwin Smith 248. Mr. States.

A workshop for the development of talent and skills in the art forms of writing. Explorations for the bases of literary aesthetics. Practice in writing poetry, prose fiction, and allied kinds of writing. Participants will submit their own work for analysis in group discussion and in conference.

Engl. 385. ADVANCED FICTION WORKSHOP (U,G)
Four hours credit. Limited to twenty students. M T W
Th F 1:30-2:45. Goldwin Smith 236. Mr. Sukenick.

An intensive workshop for writers of narrative, of short stories, novels, and allied forms, who are in need of specialized development beyond the exploratory stages of creative writing. Participants will submit their own work for analysis in group discussion and in conference.

Engl. 387. ADVANCED POETRY WORKSHOP (U,G)
Four hours credit. Limited to twenty students. M T W
Th F 3-4:15. Goldwin Smith 236. Mr. Matthews.

An intensive workshop for poets in need of specialized development beyond the exploratory stages of creative writing. Participants will submit their own work for analysis in group discussion and in conference.

The contribution of the Department of Music to the Summer Arts Festival is unusual in its presentation. A series of evening concerts, readings, workshops, and summer courses makes up the agenda.

The Summer Viol School will be taught by professional performers who will form the consort of viols for the concert series. Consorts composed of participants of the School will be presented in informal concerts.

Compositions written by participants of the Composers Workshop will be read by members of the string quartet, the woodwind quintet, and the choral group. Readings will be held the day following the related concert and will be open to the public without charge. The choral music group, in addition to reading new choral compositions by student members of the Composers Workshop, will present one evening concert and will join with the Summer Session Choir on two Sundays for the Sage Chapel services. Students taking The Art of Music not only will hear lectures and participate in class projects but also will observe live music demonstrations by attending concert rehearsals and reading sessions.

Music Program

SUMMER SESSION CONCERT SERIES

In the past, the Summer Session Concert Series has provided the Cornell community with a variety of programs of chamber music and recitals. The 1970 Concert Series, as part of the Summer Arts Festival, is presenting an expanded program of evening concerts by distinguished artists. Six evening concerts will be held on successive Thursdays (July 2, 9, 16, 23, 30, and August 6) in the air-conditioned comfort of the Alice Statler Auditorium. The Concert Series will include performances by a consort of viols, string quartet, woodwind quintet, and a choral ensemble, in addition to a solo piano recital and a duo piano recital. On Sunday, July 26, an organ recital will be given. The names of the performing artists for the Concert Series will be announced on registration day.

CORNELL SUMMER VIOL SCHOOL

July 1-July 15

The program of the Summer Viol School is designed for advanced players who are prepared to work seriously on both consort and solo repertoire. In order to give students opportunities to perform in informal public concerts and to provide as much individual attention as possible, only a limited number of students will be accepted. Instruction will be given every morning from 9:00 a.m. to noon, and students are expected to practice during the afternoons. Classes in solo and consort playing will alternate and be given equal attention. Every student is expected to participate to the fullest extent.

Inquiries and requests for applications should be addressed to Professor John Hsu, Department of Music, Cornell University, Ithaca, New York 14850.

COMPOSERS WORKSHOP

July 13-July 31

Music 457u. COMPOSITION (G)

Three hours credit. Registration only by consent of the instructor. M W F 9-12. Lincoln 121. Mr. Husa.

A seminar and workshop for composers will be offered to advanced student-composers with particular emphasis given to writing chamber works. These compositions will be read in four sessions by visiting ensembles and resident performers, including a string quartet, a woodwind quintet, vocal ensembles, and keyboard virtuosos. Class discussions will include new techniques and possibilities in composing. Students will be required to analyze and discuss the scores of specific works. The program will conclude

with an informal concert of compositions written by the participants.

Inquiries should be addressed to Professor Karel Husa, Department of Music, Cornell University, Ithaca, New York 14850.

CHORAL MUSIC PROGRAM

July 12-July 25

A novel program in choral music provides gifted students and residents the opportunity to join with an ensemble of young professional singers in an intensive two-week institute of rehearsals, reading sessions, demonstrations, and performances. Participants will rehearse each morning, afternoon, and evening. The repertory, selected from the gamut of choral literature, will emphasize Renaissance, baroque, and contemporary music. The ensemble will provide live examples of vocal and choral music for the course Art of Music; will read choral compositions written by students of the Composers Workshop; and will join the Summer Session Choir at two Sage Chapel services. In addition, the ensemble will present a concert as part of the summer series. Several informal recitals will be held featuring the professional singers as soloists or in small groups.

Admission to the Choral Music Program is by audition only. Inquiries should be addressed to Professor Thomas A. Sokol, Department of Music, Cornell University, Ithaca, New York 14850.

Music 101. THE ART OF MUSIC (U,G)

Three hours credit. No prerequisites required. M T W Th F 9:30-10:45. Sage Chapel. Mr. Sokol.

An introduction to the elements of music through a study of musical literature selected from a wide range of the history of music. In addition to lectures and class projects, students will observe live music demonstrations and will attend concerts by visiting and resident performers. (See Choral Music Program above.)

Music 111. SAGE CHAPEL CHOIR (U)

One hour credit. Registration limited to members of the Summer Session who are also registered for another course or courses in Summer Session. Rehearsals, Tuesday evenings, 7:15-9, and Sunday mornings, 9:30. Sage Chapel. Mr. Paterson.

The Sage Chapel Choir will be joined by the choral music group (see Choral Music Program, above) for two Sunday morning services. Membership in the Choir is not limited to persons who register for the course.

Studios in Art

PAINTING, SCULPTURE, GRAPHIC ARTS, PHOTOGRAPHY

July 6-August 14

During the summer months, the Cornell Department of Art presents a two-fold program consisting of introductory courses for those persons wishing to begin to explore their interest in art or to pursue their interests on a nonprofessional level; and courses on an intensive, concentrated level for those persons already committed to the study of art who wish to advance their studies. The staff will consist of prominent members of the Cornell faculty, augmented by distinguished contemporary artists who have been teaching at other institutions. Painting will be taught by Jack Bosson, Norman Daly, and Friedel Dzubas. Robert Mangold and Jeffrey Poklen will teach sculpture. Instruction in the graphic arts will be given by Steve Poleskie and Arnold Singer, and photography will be taught by Thomas Burton.

Courses in the three arts are available in each of three two-week periods: July 6-17; July 20-31; August 3-14. Instruction is open to students at all levels of experience and will involve individual assignments and criticism. Small classes give the students of Summer Session ample opportunity for personal communication with their instructors and their fellow students.

Works by the faculty of the Summer Studios in Art will be on exhibit at the White Art Museum from July 14 to August 30.

For additional information and an application form, write to the Director, Summer Studios in Art, B-20 Ives Hall, Cornell University, Ithaca, New York 14850.

Theatre Arts

The summer program of the Department of Theatre Arts is organized to present a variety of perspectives on the contemporary theatre. The course offerings, as well as the production work on the summer season of plays, and the final production of these plays in repertory have been designed as an integrated experience of the contemporary theatre. In addition to the Summer Repertory Theatre, the Department of Theatre Arts is presenting a dance program and a Film Production Studio, both entirely new offerings to the Summer Session.

For further information write to Professor James H. Clancy, Lincoln Hall, Cornell University, Ithaca, New York 14850.

DANCE PROGRAM

The summer dance program at Cornell is planned as a six-week period of intensive study and performance for a company of eight advanced students intending

to enter the professional field. The study program offered by the Department of Theatre Arts includes daily classes in technique and composition taught by both a guest performer-choreographer and a member of the Cornell dance faculty. In addition to classes, each day's schedule will include rehearsal time for works in progress by faculty and students, which will be presented in concert at the end of the season.

In addition, the course listed below is open to students of the Summer Session. Noncredit technique classes will be offered for the Cornell community by the members of the company and occasional company classes or rehearsals will be open for observers.

Th. Arts. 282. DANCE AND MOVEMENT
FOR THE THEATRE (U,G)

Three hours credit. M T W Th F 1:30-2:45, Lincoln 301. Miss Lawler.

Basic dance technique, composition, and improvisation designed to help the actor improve his use of the body as an expressive instrument.

FILM PRODUCTION STUDIO

The Department of Theatre Arts will produce a feature-length film to be conceived and directed by a professional independent filmmaker. The filmmaker and professional technicians will be visiting artists, supplementing the regular staff of the Department's cinema division. No more than thirty students will be permitted to participate in the production aspects of the film.

Although an exact description of the film is not possible at this time, the character of the film can be defined as "experimental, purely cinematic, and having no relation to commercial moving pictures." The Ithaca area affords an outstanding variety of sites for location shooting, and the Cornell campus offers a broad range of facilities for the new independent filmmaker. Students taking part in the program will be given the opportunity to create and shape a sequence or scene of the film under the direction of the visiting filmmaker and will be expected to assist in other phases of the film through final print.

Students interested in this program should enroll in the following course:

*Th. Arts. 370. FILM PRODUCTION STUDIO (U,G)
Six hours credit. Enrollment limited to thirty students. M T W Th F 10-11 a.m. and other studio hours (mornings, afternoons, and evenings). Lincoln B-1 and other film facilities. Mr. Beck and visiting artists.

An intensive studio program in which students will be involved in all phases of professional filmmaking. A professional filmmaker and staff of experienced technicians will be in residence to produce an independent film during the term. Students will have the opportunity to assist in all phases of the project: cinematography, sound recording, acting, lighting,

setting, editing, rerecording, and preparation of final print. Fee, \$20.

SUMMER THEATRE

The Cornell Summer Repertory Theatre is composed of professional actors and graduate and undergraduate student actors under the direction of the University Theatre staff. This company will offer a summer season of contemporary drama chosen from such plays as *Oh What a Lovely War*, Stoppard's *Rosencrantz and Guildenstern Are Dead*, Kopit's *Indians*, Dürrenmatt's *Visit*, Brecht's *Resistible Rise of Arturo Ui*, Frisch's *Firebugs* and Shaffer's *Royal Hunt of the Sun*.

Following are the course listings:

Th. Arts 280. BEGINNING ACTING (U,G)

Three hours credit. M T W Th F 9:30-10:45. Lincoln 304. Staff.

Introduction to the problems and basic techniques of contemporary acting. Practice in creative exercises, pantomime, improvisation, physical and imaginative script interpretation.

Th. Arts 282. DANCE AND MOVEMENT
FOR THE THEATRE

(See Dance Program, pp. C-6 and C-7.)

Th. Arts 300. DIRECTED STUDIES (U,G)

Credit and hours to be arranged.

Th. Arts 343. THE CONTEMPORARY DRAMA (U,G)

Three hours credit. M T W Th F 11-12:15. Lincoln 302. Mr. Carlson.

Trends in recent dramatic literature studied through the writings of such authors as Beckett, Ionesco, Genet, Osborne, Pinter, Albee, Kopit, Weiss, Dürrenmatt, Frisch, and Mrozek.

Th. Arts 344. PRODUCTION APPROACHES
TO THE CONTEMPORARY THEATRE (U,G)

Three hours credit. M T W Th F 9:30-10:15. Lincoln 302. Mr. Carlson.

Discussion of the influence of such writers as Brecht, Artaud, and Grotowski on contemporary theatre production. Certain production implications of such experimental approaches as collective creations, happenings, and multimedia creations will also be considered.

*Th. Arts 370. FILM PRODUCTION STUDIO

(See p. C-7.)

Additional Information

Inquiries regarding the Summer Arts Festival may be addressed to the Division of Summer Session, B-20 Ives Hall, Cornell University, Ithaca, New York 14850.

[Continued from p. 46]

A survey of European history since the French Revolution. Attention is given to the major political, social, and intellectual developments of the modern Western world. A considerable portion of the reading is in contemporary sources.

Hist. 216. HISTORY OF THE U.S.A., 1783-1860 (U,G)

Three hours credit. M T W Th F 9:30-10:45. Goldwin Smith 221. Miss Erickson.

A survey of American history from the time of independence to the Civil War with special attention to five themes: the framing of the Constitution; the westward movement; extension of democracy; the background to the Civil War; the gradual achieving of economic independence.

Hist. 320. LATIN AMERICAN HISTORY SINCE INDEPENDENCE (U,G)

Four hours credit. M T W Th F 8-9:15. West Sibley 102. Mr. D. Green.

A survey of the nineteenth and twentieth centuries, using a topical approach. Mexico, Brazil, and Argentina receive most emphasis.

See also Latin American Language and Area Program, pp. 77-78.

Hist. 324. HISTORY OF CHINA DURING THE NINETEENTH AND TWENTIETH CENTURIES (U,G)

Four hours credit. M T W Th F 11-12:15. West Sibley 102. Mr. Clubb.

A study of the development of modern China with emphasis on twentieth-century changes. Domestic and foreign affairs will be treated. Lectures and discussions with a program of outside reading and papers.

Hist. 344. THE POLITICS OF EUROPEAN PREDOMINANCE, 1649-1917 (U,G)

Four hours credit. Enrollment is limited to twenty-five. M T W Th F 8-9:15. Goldwin Smith 128. Mr. Walker.

An examination of European international activities from the Treaty of Westphalia to World War I, investigating through a series of topics the relation between European world power and its competitive state politics, its systems of administrative organization, its social structure, its economy and its demography. An exploratory course based mainly on readings and discussion.

Hist. 356. INTELLECTUAL AND CULTURAL HISTORY OF GERMANY IN THE NINETEENTH CENTURY (U,G)

Four hours credit. M T W Th F 2-3:15. West Sibley 102. Mr. Windell.

Lectures and readings on major developments of the Romantic Age and its aftermath. Among the figures to be treated are Goethe, Hegel, Marx, Wagner, Nietzsche, Freud, and Einstein.

Hist. 381. AMERICAN HISTORY SINCE 1945 (U,G)

Four hours credit. M T W Th F 2-3:15. West Sibley 101. Mr. D. Green.

Topics include domestic and diplomatic aspects of World War II, social reform from the Fair Deal to the New Frontier, civil liberties, and civil rights.

Hist. 456. RESEARCH SEMINAR IN MODERN GERMAN HISTORY (U,G)

Four hours credit. Prerequisite, a reading knowledge of German and consent of the instructor. For graduate students and well qualified undergraduates. M T W Th F 11-12:15. Goldwin Smith 128. Mr. Walker.

Topics to be negotiated, but there will be wide latitude of choice.

Hist. 480. ECONOMIC HISTORY OF THE UNITED STATES SINCE 1890 (U,G)

Four hours credit. M T W Th F 2-3:15. East Sibley 115. Miss Erickson.

Factors in growth and fluctuations in economic activity. The increasing ascendance of an urban-industrial-service economy with attention to regions where patterns diverged. Economic background to protest movements from the Populists to the New Deal with a parallel consideration of other sources or protest. The changing economic relations of the United States with the outside world.

Hist. 490. SEMINAR IN MODERN CHINESE HISTORY (G)

Two hours credit. M T W Th F 2-3:15. West Sibley 318. Mr. Clubb.

For graduate students who are taking History 324 and for other graduate students who have similar preparation. Consideration will be given to some aspects of Chinese affairs which have particular relevance to an appraisal of her place in today's world.

HOTEL ADMINISTRATION

Typewriting

Hotel Adm. 37. TYPEWRITING (U,G)

Two hours credit. Hotel elective. Maximum enrollment thirty-five. M T W Th F 9:30-10:20. Statler 337. Mrs. Seaburg.

The personal needs of college students as well as the basic skills necessary for office jobs are met by this course in elementary typewriting. Instruction is given in the typing of business letters, reports, and tabulations. No previous typing skill is needed. Those who have had typing before may enroll in the course to improve their speed and accuracy.

See also Special Programs, p. 76.

HUMAN DEVELOPMENT AND FAMILY STUDIES

HD&FS 115. THE DEVELOPMENT OF HUMAN BEHAVIOR (U)

Three hours credit. M T W Th F 11-12:15. Goldwin Smith D.

The aim is to contribute to the beginning student's knowledge and understanding of human beings through a study of their development from infancy to adulthood. Attention is focused on the role of biological factors, interpersonal relationships, social structure, and cultural values in shaping the behavior of the developing individual. Special emphasis is given to the practical social implications of existing knowledge. (This course is required for a graduate degree in the College of Human Ecology.)

See also Psychology 101, p. 56, and Sociology 101, p. 60.

HUMAN NUTRITION AND FOOD

HNF. 500. SPECIAL PROBLEMS FOR GRADUATE STUDENTS (G)

Credit and hours to be arranged. Department faculty. For graduate students recommended by their chairmen and approved by the instructor in charge

for independent, advanced work. Experience in research laboratories in the department may be arranged.

HNF 599. MASTER'S THESIS AND RESEARCH (G)

Credit and hours to be arranged. S/U grades optional. Registration with permission of the instructor. Misses Armbruster, Hester, Mondy, Morrison, Newman, Rivers, Schwartz, and Young. Mrs. Devine, Mrs. Roe, and Mrs. Snook; Mr. Lutwak.

HNF 699. DOCTOR'S THESIS AND RESEARCH (G)

Credit and hours to be arranged. S/U grades optional. Registration with permission of the instructor. Misses Armbruster, Hester, Mondy, Morrison, Newman, Rivers, Schwartz, and Young. Mrs. Devine, Mrs. Roe, and Mrs. Snook; Mr. Lutwak.

INDUSTRIAL AND LABOR RELATIONS

I&LR 250. SURVEY OF INDUSTRIAL AND LABOR RELATIONS (U,G)

Three hours credit. M T W Th F 9:30-10:45. Ives 112. Mr. Aronson.

A survey for students in other divisions of the University. An analysis of the major problems in industrial and labor relations; labor union history, organization and operation; labor market analysis and employment practices; industrial and labor legislation and social security; personnel management and human relations in industry; collective bargaining; mediation and arbitration; the rights and responsibilities of employers and employees; the major governmental agencies concerned with industrial and labor relations.

I&LR 499. DIRECTED STUDIES (U)

Credit and hours to be arranged.

For individual research, conducted under the direction of a member of the faculty, in a special area of labor relations not covered by regular course offerings. Registration normally limited to upperclassmen who have demonstrated ability to undertake independent work.

I&LR. 699. DIRECTED STUDIES (G)

Credit and hours to be arranged.

For individual research conducted under the direction of a member of the faculty.

Special Noncredit Seminars and Workshops

In the summer of 1970 the School is again offering a series of one-week non-credit seminars and workshops. These units are designed for practitioners and, consequently, each will give specific emphasis to an operational area in the field. A special announcement covering the program of the School, including details of cost and content, may be obtained by writing to the Assistant Dean for Extension and Public Service, School of Industrial and Labor Relations, Cornell University, Ithaca, New York 14850.

MATHEMATICS

Math. 111. ANALYTIC GEOMETRY AND CALCULUS (U)

Three hours credit. Prerequisite, three years of college preparatory

mathematics including trigonometry. M T W Th F 8-9:15. White B-25. Mr. Livesay.

Plane analytic geometry, differentiation and integration of algebraic and trigonometric functions, applications.

Math. 112. ANALYTIC GEOMETRY AND CALCULUS (U)

Three hours credit. Prerequisite, Mathematics 111 or the equivalent. M T W Th F 9:30-10:45. White 310. Mr. Platek.

Differentiation and integration of algebraic, trigonometric, logarithmic, and exponential functions with applications. Plane analytic geometry. Related topics, including polar coordinates, infinite series.

Math. 121u. ANALYTIC GEOMETRY AND CALCULUS (U)

Three hours credit. *July 1 to July 24*. Prerequisite; a thorough knowledge of trigonometry and exceptional aptitude for mathematics. Students must also register for Mathematics 122u. M T W Th F 9:30-10:45 and 2-3:15. White B-15. Mr. Rinehart.

Emphasis on the mastery and techniques needed for further preparation in the sciences, including engineering and advanced mathematics. Mathematics 121 and 122 together treat the following topics: plane analytic geometry through conics; differentiation and integration of polynomials with applications to rates, maxima, volumes, pressures, etc.; differentiation and integration of algebraic, trigonometric, logarithmic, and exponential functions, with applications; related topics including polar coordinates, parametric equations, and infinite series.

Math. 122u. ANALYTIC GEOMETRY AND CALCULUS (U)

Three hours credit. *July 27 to August 14*. Prerequisite, current registration in Mathematics 121u. M T W Th F 9:30-10:45 and 2-3:15. White B-15. Mr. Sweedler.

See description above under Mathematics 121u.

Math. 200. BASIC CONCEPTS OF MATHEMATICS (U)

Three hours credit. Prerequisite, Mathematics 122 or its equivalent. M T W Th F 9:30-10:45. White B-9. Mr. Nerode.

Primarily for undergraduates, particularly for prospective teachers and those with a cultural interest in mathematics. Set theory, logic, axiom systems, the real number field, other simple algebraic structures, cardinal numbers.

Math. 213. ANALYTIC GEOMETRY AND CALCULUS (U)

Three hours credit. Prerequisite, Mathematics 112 or the equivalent. M T W Th F 11-12:15. White B-9. Mr. Hamilton.

Solid analytic geometry, partial derivatives, multiple integrals.

Math. 331. LINEAR ALGEBRA (U,G)

Four hours credit. Prerequisite, Mathematics 200 or 213 or the equivalent. M T W Th F 11-12:15. White B-25. Mr. Connelly.

Vectors, matrices, and linear transformations. Affine and Euclidean spaces. Transformation of matrices. Eigenvalues. Emphasis on applications. The additional credit is earned through homework and additional reading.

Math. 370. ELEMENTARY STATISTICS (U,G)

Four hours credit. Prerequisites, Mathematics 112, 122, or 202. M T W Th F 9:30-10:45. White B-29. Mr. Balch.

Topics in probability which are essential to an understanding of statistics;

introduction to the principles underlying modern statistical inference and the rationale underlying choice of statistical methods in various situations. This is a terminal course, intended for those who will take no further work in this area. The additional credit is earned through homework and additional reading.

INTRODUCTORY COLLEGE MATHEMATICS. See Agricultural Orientation 110, p. 33.

SEMINAR ON MATHEMATICAL ECONOMICS. See Economics 300A, p. 38.

MODERN FOREIGN LANGUAGES AND LITERATURE

Division of Modern Languages

Secondary school students who have been admitted to a college for the coming academic year may take any language as undergraduate students.

An option is provided in French, German, etc., (where offered), as follows: the basic course sequence, 101 and 102, gives a thorough grounding in the language—listening, speaking, reading, and writing. It is conducted in small groups with native speakers as instructors. The elementary reading course sequence; 131u, 132u and 133u, 134u concentrates on the comprehension of written texts.

For the basic course, all students who have had no previous preparation in the language they elect, should register for course 101. Students who have taken previous course work in the language they elect will be placed in the appropriate course on the basis of College Entrance Examination Achievement scores which they must make available before registration.

Non-Cornell students, who cannot submit CEEB scores, must supply transcripts showing amount of language work done and report to the Division of Modern Languages for proper placement at the time of registration.

The 101 or 102 basic courses, and the full course sequence—131u-132u or 133u-134u, have four hours of classroom instruction per day plus independent study. For this reason students who register for these courses are not permitted to register for any other courses.

Time and place of first class meeting for the courses will be listed in the Supplementary Announcement, which will be distributed on registration day.

French

Fr. 101. FRENCH BASIC COURSE I (U)

Six hours credit. Students who have previously studied any French must take the qualifying examination before registering for this course. See additional information above. Twenty hours of instruction each week. Mr. Noblitt and staff.

Fr. 102. FRENCH BASIC COURSE II (U)

Six hours credit. Students who have not completed French 101 must take the qualifying examination before registering for this course. See above. Twenty hours of instruction per week. Mr. Noblitt and staff.

Fr. 131u. FRENCH ELEMENTARY READING COURSE I (U,G)

Three hours credit. *July 1 to July 24*. Twenty hours of instruction per week. Mr. Noblitt and staff.

Designed to help students acquire a reading knowledge of the language.

Fr. 132u. FRENCH ELEMENTARY READING COURSE I (U,G)

Three hours credit. *July 27 to August 14*. Prerequisite, French 131u or its equivalent. Twenty hours of instruction each week. Mr. Noblitt and staff.

A continuation of French 131u.

Fr. 133u. FRENCH ELEMENTARY READING COURSE II (U,G)

Three hours credit. *July 1 to July 24*. Prerequisite, French 132u or its equivalent. Twenty hours of instruction each week. Mr. Noblitt and staff.

A continuation of French 132u.

Fr. 134u. FRENCH ELEMENTARY READING COURSE II (U,G)

Three hours credit. *July 27 to August 14*. Prerequisite, French 133u or its equivalent. Twenty hours of instruction each week. Mr. Noblitt and staff.

A continuation of French 133u.

Fr. 203. FRENCH INTERMEDIATE COURSE (CONVERSATION) (U,G)

Three hours credit. Prerequisite, qualification in French or placement by the Division of Modern Languages based on CEEB score. M T W Th F 9:30-10:45 and 12:30-1:45 (two periods of seventy-five minutes each). Goldwin Smith 183. Mr. Noblitt and staff.

Guided conversation, grammar drill, oral and written composition. Emphasis is placed upon increasing the student's oral command of French.

French Literature, see p. 60.

German

Germ. 101. GERMAN BASIC COURSE I (U)

Six hours credit. Students who have previously studied any German must take the qualifying examination before registering for this course. See additional information, p. 51. Twenty hours of instruction each week. Mr. Lowe and staff.

Germ. 131u. GERMAN ELEMENTARY READING COURSE (U,G)

Three hours credit. *July 1 to July 24*. Twenty hours of instruction per week. Mr. Lowe and staff.

Designed to help students acquire a reading knowledge of the language.

Germ. 132u. GERMAN ELEMENTARY READING COURSE (U,G)

Three hours credit. *July 27 to August 14*. Prerequisite, German 131u or its equivalent. Twenty hours of instruction each week. Mr. Lowe and staff.

A continuation of German 131u.

German Literature. See p. 45.

Russian

Russ. 101. RUSSIAN BASIC COURSE (U)

Six hours credit. Students who have previously studied any Russian must take

the qualifying examination before registering for this course. See additional information, p. 51. Twenty hours of instruction per week. Mr. Leed and staff.

Spanish

Span. 101. SPANISH BASIC COURSE (U)

Six hours credit. Students who have previously studied any Spanish must take the qualifying examination before registering for this course. See additional information, p. 51. Twenty hours of instruction per week. Mr. Stark and staff.

Span. 131u. SPANISH ELEMENTARY READING COURSE (U,G)

Three hours credit. *July 1 to July 24*. Twenty hours of instruction per week. Mr. Stark and staff.

Designed to help students acquire a reading knowledge of the language.

Span. 132u. SPANISH ELEMENTARY READING COURSE (U,G)

Three hours credit. *July 27 to August 14*. Prerequisite, Spanish 131u or its equivalent. Twenty hours of instruction each week. Mr. Stark and staff.

A continuation of Spanish 131u.

English as a Second Language

July 1—August 14

Intensive courses in English for speakers of other languages will be given as part of the six-week Summer Session. Modern methods of teaching language will be used to provide greater fluency and comprehension of both oral and written English.

These courses are designed with particular attention to the requirements of nonnative English speakers who plan to attend institutions of higher learning and whose lack of fluency may hinder them. *No beginning students will be accepted.*

A diagnostic test will be administered to all students admitted to the courses during the first week of classes (July 1 to July 7). Students will attend classes four hours a day, and language laboratory facilities will be available.

Engl. 211u. ENGLISH AS A SECOND LANGUAGE (U,G)

Three hours credit. *July 1 to July 24*. Prerequisite, placement by the instructor. Twenty hours of instruction per week. Mr. Elliott.

Engl. 212u. ENGLISH AS A SECOND LANGUAGE (U,G)

Three hours credit. *July 27 to August 14*. Prerequisite, English 211u. This is a continuation of English 211u. Twenty hours of instruction per week. Mr. Elliott.

Time and place of first class meetings will appear in the Supplementary Announcement available on registration day.

For languages other than those offered by the Division of Modern Languages, see:

Classics—Greek and Latin, pp. 36–37

German Literature, p. 45

Romance Studies—French Literature, p. 60

Asian Language Program, pp. 66–67

Burmese, Chinese, Indonesian, Javanese, Thai, Vietnamese

Latin American Language and Area Program—Quechua, pp. 77–78

Cornell German Program in Heidelberg, pp. 74–75

MUSIC

Music 101. THE ART OF MUSIC (U,G)

Three hours credit. M T W Th F 9:30–10:45. Sage Chapel. Mr. Sokol.

An introduction to the elements of music through a study of musical literature selected from a wide range of the history of music. In addition to lectures and class projects, students will observe live music demonstrations and will attend concerts by visiting and resident performers. See also Summer Arts Festival, pp. C-3–C-5.

Music 111. SAGE CHAPEL CHOIR (U)

One hour credit. Registration limited to members of the Summer Session who are also registered for another course or courses in the Summer Session. Rehearsals, Tuesday evenings 7:15–9 and Sunday mornings 9:30. Sage Chapel. Mr. Paterson.

Membership in the Choir is not limited to persons who register for the course. See also Summer Arts Festival, p. C-5.

Music 457u. COMPOSITION (COMPOSERS WORKSHOP) (G)

Three hours credit. *July 13 to July 31*. Registration only by consent of the instructor. M W F 9–12. Lincoln 121. Mr. Husa.

A seminar and workshop for composers will be offered to advanced student-composers with particular emphasis given to writing chamber works. These compositions will be read in four sessions by visiting ensembles and resident performers, including a string quartet, a woodwind quintet, vocal ensembles, and keyboard virtuosos. Class discussions will include new techniques and possibilities of composing. Students will be required to analyze and discuss the scores of specific works. The program will conclude with an informal concert of compositions written by the participants.

Inquiries should be addressed to Professor Karel Husa, Department of Music, Cornell University, Ithaca, New York 14850.

The Composers Workshop is a component of the Summer Arts Festival. For additional information, see pp. C-3–C-5.

PHILOSOPHY

Phil. 215. SEMANTICS (U)

Four hours credit. M T W Th F 2–3:15. Goldwin Smith 221. Mr. Donnellan.

A study of philosophical problems about language. Topics include: theories of meaning; the nature of communication; different types of discourse: mathematical, ethical and scientific; semantic paradoxes; language and our view of the world.

Phil. 225. ETHICS (U)

Four hours credit. M T W Th F 11–12:15. Goldwin Smith 221. Mr. Donnellan.

An introduction to problems and theories in moral philosophy with special emphasis on sources of skepticism about the objectivity of moral principles and values.

PHYSICS

*Physics 105. TOPICS IN PRESENT-DAY PHYSICS (U)

Three hours credit. Prerequisites, three units of college preparatory mathematics and a one-year course in either secondary or college physics, and consent of the instructor. M T W Th F 10-12. One weekly two-hour lecture (usually on Mondays), a two-hour seminar-discussion meeting on each of three days of the week, and one weekly two-hour meeting either for additional lectures or for viewing and discussing pertinent instructional movies. Except for the common Monday lectures and for the additional lectures or movies, students are subdivided into class-study groups according to interests and background preparation. Physics 105 is not equivalent to Physics 101, 121, 201, or 207 of the academic year. Lectures, Rockefeller B. Mr. Richardson.

Principal topics will probably be special relativity and quantum theory. Fee, \$5.

*Physics 207. FUNDAMENTALS OF PHYSICS (U)

Four hours credit. Prerequisites, one year of secondary school physics and Math. 111, or consent of the instructor. Mathematically-apt students may take this course with simultaneous enrollment in Math. 111. (No credit will be granted if the student has credit for Physics 101 or 121, or the equivalent.) See also Physics 208. Lectures, M, Rockefeller A, and T W Th F, Rockefeller 105, 11-12:15; seminars and laboratory. M T W Th F, Rockefeller 322-4, 1:30-4:30. Mr. Cassel.

Dynamics of particles, conservation laws, collisions, harmonic oscillations, and special theory of relativity. At the level of *Physics*, Part I, 1966, by Resnick and Halliday. Fee, \$5.

*Physics 208. FUNDAMENTALS OF PHYSICS (U)

Four hours credit. Prerequisites, Physics 207 and at least simultaneous enrollment in Math. 112, or consent of the instructor. (No credit will be granted if the student has credit for Physics 102 or 233, or the equivalent.) Note: Summer students, who wish to do so, may obtain permission to enroll simultaneously in Physics 207 and 208 by passing a special examination administered at Cornell on July 1, 1970. Lectures, M, Rockefeller A, and T W Th F, Rockefeller 103, 8-9:15; seminars and laboratory, M T W Th F, Rockefeller 322-4, 1:30-4:30. Mr. Cassel.

A continuation from Physics 207. Dynamics of fluids, acoustic waves, laws of thermodynamics, electromagnetic waves, polarization, diffraction, interference, the wave-particle properties of matter and an introduction to the ideas of quantum mechanics. At the level of *Physics*, Part II, 1966, by Resnick and Halliday. Fee, \$5.

*Physics 360. INTRODUCTORY ELECTRONICS (U,G)

Three hours credit. Prerequisites, Physics 208 or 234 (and preferably 310), or consent of the instructor. Lectures and laboratory, M T W Th F 2-5, Clark 309. Mr. Cotts.

Introduction to the principles of semiconductor devices, of electronic components and circuits, and to the operating characteristics of power supplies,

amplifiers, oscillators, switching and timing circuits, etc. Knowledge of methods and techniques invaluable to the student who plans experimental work in almost any field involving modern instruments. At the level of *Elementary Electronics*, 1966, by White, or *Basic Electronics for Scientists*, 1966, by Browphy. Fee, \$10.

*Physics 500. INFORMAL GRADUATE LABORATORY (G)

One or two hours credit. Prerequisites, Physics 236, 310 or 360, and 436, and consent of the instructor. Laboratory, M T W Th F 2-5, Clark 308. Mr. Browman.

Topics as in Physics 510, listed in the eight-week session, p. 32. Fee, \$5. per credit hour.

The names listed as faculty for the above courses are not necessarily instructors of these courses for the summer. They are "advisors" to whom you may direct questions concerning the prerequisites, etc., for the courses. Names of the instructors will be listed in the Supplementary Announcement which is distributed on registration day.

For other offerings of the Department, see pp. 31-32, and also Special Programs, p. 63.

PSYCHOLOGY

Psych. 101. INTRODUCTION TO PSYCHOLOGY: EXPERIMENTAL APPROACH TO BEHAVIOR (U)

Three hours credit. M T W Th F 9:30-10:45. Goldwin Smith D. Mr. Wheeler.

Intended to provide an acquaintance with the experimental analysis of behavior in organisms ranging from paramecia to man. The focus is upon enduring problems arising from the study of such basic processes as learning, motivation, perception, intelligence, and brain functioning. An attempt is made to convey not only the principles of experimentation but also the implications of such an approach for our understanding of human behavior. Lectures are supplemented by films, demonstrations, and discussion seminars.

Introduction to Psychology: Development of Human Behavior. See Human Development and Family Studies 115, p. 48.

Psych. 102. INTRODUCTION TO PSYCHOLOGY: PERSONALITY AND SOCIAL BEHAVIOR (U)

Three hours credit. M T W Th F 11-12:15. Goldwin Smith 156. Mr. Knurek.

Three major areas of psychology will be surveyed: theories of personality, psychology of individual differences, and selected topics of contemporary, as well as long standing interest in social psychology. An emphasis will be placed upon the interaction of an individual's personality characteristics with specific situational contexts which produce various forms of social behavior.

Three general views of personality will be presented: the conflict models of Freud, Erikson, and Rank; the fulfillment models of Rogers, Maslow, and Adler; and the consistency positions of McClelland, Fiske, and Maddi. Short selected readings of several theorists will be required.

Selected topics in psychology of individual differences will include authoritarianism and dogmatism, achievement and intelligence, fate control, approval needs and self-esteem, and various cognitive styles. Selected primary source readings will be required.

Social psychological areas of interest to be covered will include aggression

and affiliation, conformity and persuasibility, attitudes and roles, conflict and bargaining, leadership and self-presentation, and prejudice and deviance. Readings will include selected critical experiments and classic surveys.

Psych. 206. PSYCHOLOGY IN BUSINESS AND INDUSTRY (U)

Three hours credit. M T W Th F 11-12:15. Goldwin Smith 242. Mr. F. Schapiro.

An introduction to current theories and research of men in the work environment. Three major areas of the individual's behavior will be considered: The first area is the methods of selection and placement for specific jobs by industry, as well as selection and subsequent development of career goals by individuals. The effectiveness of psychological testing procedures in both selection and counseling will be considered. The second area of examination will be the motivation to work and consume. Questions will be raised about why people work, how job satisfaction relates to worker motivation and production, why specific products are bought, etc. The final area of study will be human factors in man-environment interactions in industry. Safety, accidents, fatigue, and stress will be discussed in relation to man-machine systems. Problems arising from the complexity of modern industrial systems will be analyzed. The major emphasis throughout the course will be placed on the individual as he relates to the industrial setting.

Psych. 212. MODERN PSYCHOLOGY IN HISTORICAL PERSPECTIVE (U)

Three hours credit. M T W Th F 8-9:15. Morrill 310. Mr. Dolezal.

An examination of the broad problems of psychology, e.g., mind and body, the basis of knowledge, the basis of conduct, as they have been envisaged at various periods of history. Special emphasis is laid on the relation between psychological thinking and developments in philosophy, religion, the sciences, literature, and the arts. Designed for the general student.

Psych. 215. PSYCHOLINGUISTICS (U)

Three hours credit. M T W Th F 9:30-10:45. Morrill 310. Miss Long.

This course will examine key questions in the psychology of language. The units include the biological bases of language, the structure of language, speech production and perception, language learning in the child, language and meaning, language and nonlinguistic behavior. In each area the important theories will be discussed, as well as pertinent experimental evidence, in an attempt to show the important questions which need to be answered in psycholinguistics. The course will be appropriate for students who have studied neither psychology nor linguistics, but it will also be useful for advanced students who want an introduction to psycholinguistics.

Psych. 281. INTERPERSONAL RELATIONS AND SMALL GROUPS (U)

Three hours credit. Prerequisite, Sociology 101, Psychology 102, Human Development 115, or equivalent. M T W Th F 9:30-10:45. Goldwin Smith 242.

The presentation and development of selected theories offered to account for the dynamics of interpersonal relationships and the social structures which emerge from and which condition these relationships. Emphasis will be upon social-psychological processes in small groups such as athletic teams, committees, fraternities, and engaged couples. These perspectives are compared and evaluated.

Also listed under Sociology 281, p. 60.

Psych. 305. PERCEPTION: ART AND MUSIC (U)

Three hours credit. M T W Th F 11-12:15. Morrill 340. Messrs. Barrand and Toleno.

The perception of art and music has traditionally been treated as a set of problems in the philosophy of criticism, i.e.; aesthetics. This approach has been limited by the lack of an overall psychological model of explanation. This course examines the perception, appreciation, evaluation, creation, etc., of 'aesthetic objects' in various art forms by making use of the orientation to perception inherent in the work of James J. Gibson. The first half of the course will develop a general descriptive system for a psychology of aesthetics, incorporating examples from the visual arts and music. The latter half will involve various demonstrations and experiments on art and folk music, aimed at specifying the information (e.g., distinctive features, invariants) in visual and musical displays. For example:

1. An investigation of the relation between the "melody" of a spoken dialect and the environment (life-style, work, etc.) of a culture or subculture in terms of the structure and type of folk melodies and songs generated by that subgroup.
2. An examination of any relations that might exist between the distinctive features in music and those that have been proposed in the visual arts, specifically by Gestalt psychology.
3. An examination of the influences of the verbal community as it affects the evaluation and/or appreciation of aesthetic objects by interviewing students when they describe their experiences.

Psych. 306. LEARNING (U)

Three hours credit. Prerequisite, Psychology 101 or consent of the instructor. M T W Th F 9:30-10:45. Morrill 340. Mrs. Schneider.

Traditional and contemporary theories and paradigms of animal and human learning will be considered briefly in background readings and lectures on their relation to current evidence, e.g., theories—Pavlov, Thorndike, Guthrie, Skinner, Hull, Tolman, Gestalt, Hebb, Mowrer, etc., e.g.; paradigms—classical and instrumental conditioning, avoidance learning, discrimination, and attention. Contemporary problems will be the main focus with emphasis on the interrelationships among processes and ecological factors including learning in relation to perception, motivation, physiology, and the like.

Psych. 307. MOTIVATION: THE PSYCHOLOGY OF LOVE AND DEATH (U)

Three hours credit. M W Th 1:30-3:30. Morrill 340. Mr. J. M. Kennedy.

Successes and limitations of scientific study of significant personal events will be discussed with specific reference to love and dying. The history of modern psychology will be briefly examined to determine the purposes and methods of major movements of psychology and their relevance to such events. Representatives of current methods will be considered in more detail and will include R. May, G. Allport, and E. Kübler-Ross. Contrasting materials will be drawn from theology (M. Buber, P. Tillich) and literature (E. E. Cummings, D. Berrigan) and current popular conceptions (in music and film). Restrictions and advantages of different approaches will be described, with particular examples from animal and child studies, and statistical surveys. Discussion will include suicide, guilt and anxiety, deviance, pain and elation, the definitions of "normality" and "health."

Each student will undertake a questionnaire, an interview, or a library project.

Psych. 325. ABNORMAL PSYCHOLOGY (U)

Three hours credit. Prerequisite, nine credit hours of psychology or consent of the instructor. M T W Th F 8-9:15. Morrill 340.

An introduction to the study of disordered behavior. Description of major

syndromes, investigations and theories of etiology, and approaches to treatment, will be covered in an attempt to introduce the student to major concepts and problems in this area.

Psych. 326. COMPARATIVE PSYCHOLOGY (U)

Three hours credit. M T W Th F 11-12:15. Morrill 310. Miss West; Messrs. Cabe and A. King.

This course will investigate the rationale behind the study of animal behavior by psychologists, going beyond description, and attempting to deal with the processes and mechanisms of such behavior throughout the phyletic scale, including man. Emphasis will be placed upon the articulation of psychological processes, rather than upon the explication of specific physiological mechanisms.

The course will provide an overview of the historical and philosophical roots of the study of animal behavior, with stress upon the development of the divergence of European ethology and American comparative psychology from a common origin (e.g.; Darwin, Romanes, McDougall, G. S. Hall, C. L. Morgan, Heinroth, etc.). Relevant data, e.g., egg rolling in the Greylag goose, conditioning in planaria, use of tools by animals, imprinting, perceptual learning for the development of comparative psychology and ethology, will be considered. The learning-instinct dichotomy will be used as a convenient conceptual framework for these discussions.

Students with an interest in biology, psychology, zoology, evolution, and problems in animal behavior, are encouraged to take the course.

Psych. 526. SEMINAR IN MULTIDIMENSIONAL SCALING (G)

Four hours credit. Prerequisite, some knowledge of matrix algebra helpful. Six hours of class per week in two or three sessions, to be arranged. Goldwin Smith 21. Mr. Wilcox.

The seminar is designed to provide the student with the foundations, techniques, and criticisms of multidimensional scaling analysis of similarities data. The early metric rational for multidimensional scaling, based on a symmetric correlation matrix, is given to provide a contrast with the main topic of ordinal procedures. A method for recovering a configuration of metric distances and coordinates of points in a Euclidean space, using only ordinal properties of similarities data, was first introduced by Shepard in 1962, although the idea was first explored by Coombs ten years earlier. The more recent algorithms developed by Kruskal and by Guttman and Lingoes will be considered in some detail. The former technique permits representation in Minkowski spaces, while the latter series of programs for Smallest Space Analysis (SSA) permits obtaining solutions for conditional as well as symmetric proximity matrices. Examples of the performance of these programs, using real data from various fields in the social sciences, will be given. There will also be opportunity for individual projects, using the SSA series currently available.

In addition to these practical considerations, attention will be given to the theoretical work of Ross, Coombs, Kruskal, Guttman, Krantz and Tversky. These topics will include the relationship between multidimensional scaling and factor analysis, nonmetric factor analysis, topologically equivalent configurations, choice-points in algorithm construction, rational distance-functions for multidimensional scaling, metricity and interdimensional additivity. The problems of initial configuration and local minima, goodness-of-fit criteria, and, of course, the problem of interpretation.

ROMANCE STUDIES

French Literature

Fr. 201. INTRODUCTION TO FRENCH LITERATURE (U)

Three hours credit. Prerequisite, French achievement score of 630 or better, or consent of the instructor. M T W Th F 9:30-10:45. Goldwin Smith 281. Mrs. Parrish.

The object is to acquire a reading facility in French, while developing a critical appreciation of the literature. Some eight major poets will be read, the works selected representing significant writings from the Middle Ages to present. Depending on the level of oral proficiency, the class will be conducted in part or entirely in French.

Fr. 353. THE NOVEL FROM 1857 to 1900 (U,G)

Four hours credit. Prerequisite, two semesters of a college course in French literature. M T W Th F 11-12:15. Goldwin Smith 281. Mrs. Parrish.

The dominant literary doctrines of the period—realism and naturalism—and their expression. Extensive reading of the novelists of the period: Flaubert, Zola, Maupassant, Fromentin, Huysmans among others. Classroom discussions, written reports.

SOCIOLOGY

Soc. 101. MAN AND SOCIETY (U)

Three hours credit. M T W Th F 8-9:15. Goldwin Smith D.

An introduction to the principal questions and perspectives of sociology. The focus will be upon the history and findings of the analysis of the processes which maintain the continuity and stability of society, and which contribute to its change.

Soc. 281. INTERPERSONAL RELATIONS AND SMALL GROUPS (U)

Three hours credit. Prerequisite, Sociology 101, Psychology 102, Human Development 115, or equivalent. M T W Th F 9:30-10:45. Goldwin Smith 242.

The presentation and development of selected theories offered to account for the dynamics of interpersonal relationships and the social structures which emerge from and which condition these relationships. Emphasis will be upon social-psychological processes in small groups, such as athletic teams, committees, fraternities, and engaged couples. These perspectives are compared and evaluated.

Also listed under Psychology 281, p. 57.

Soc. 541. SOCIAL ORGANIZATION AND CHANGE (U,G)

Four hours credit. Prerequisite, graduate student status or level of advanced undergraduate majoring in a social science. M W 1:30-3:30, and one period to be arranged. Goldwin Smith 281. Mr. Robin Williams.

An analysis of major problems in theory and research in the general field of social organization and change. The subject will be studied from the standpoint of the nature and size of the social system (small groups, communities, large-scale organizations, societies) and also in terms of the social processes and properties of the system, such as integration, differentiation, conformity, deviance, conflict, and change.

THEATRE ARTS

The summer program of the Department of Theatre Arts is organized to offer a variety of perspectives on the contemporary theatre. The course offerings, as well as the production work on the summer season of plays, and the final production of these plays in repertory have been designed as an integrated experience of the contemporary theatre.

Th. Arts. 280. BEGINNING ACTING (U,G)

Three hours credit. M T W Th F 9:30-10:45. Lincoln 304. Staff.

Introduction to the problems and basic techniques of contemporary acting. Practice in creative exercises, pantomime, improvisation, physical and imaginative script interpretation.

Th. Arts. 282. DANCE AND MOVEMENT FOR THE THEATRE (U,G)

Three hours credit. M T W Th F 1:30-2:45. Lincoln 301. Miss Lawler.

Basic dance technique, composition, and improvisation designed to help the actor improve his use of the body as an expressive instrument.

Th. Arts. 300. DIRECTED STUDIES (U,G)

Credit and hours to be arranged.

Th. Arts. 343. THE CONTEMPORARY DRAMA (U,G)

Three hours credit. M T W Th F 11-12:15. Lincoln 302. Mr. Carlson.

Trends in recent dramatic literature studied through the writings of such authors as Beckett, Ionesco, Genet, Osborne, Pinter, Albee, Kopit, Weiss, Dürrenmatt, Frisch, and Mrozek.

Th. Arts. 344. PRODUCTION APPROACHES IN THE CONTEMPORARY THEATRE (U,G)

Three hours credit. M T W Th F 9:30-10:45. Lincoln 302. Mr. Carlson.

Discussion of the influence of such writers as Brecht, Artaud, and Grotowski on contemporary theatre production. Certain production implications of such experimental approaches as collective creating, happenings, and multimedia creations will also be considered.

*Th. Arts. 370. FILM PRODUCTION STUDIO (U,G)

Six hours credit. Enrollment limited to thirty students. M T W Th F 10-11 A.M., and other studio hours (mornings, afternoons, and evenings). Lincoln B-1 and other film facilities. Mr. Beck and visiting artists.

An intensive studio program in which students will be involved in all phases of professional filmmaking. A professional filmmaker and staff of professional technicians will be in residence to produce an independent film during the term. Students will have the opportunity to assist in all phases of the project: cinematography, sound recording, acting, lighting, setting, editing, re-recording, and preparation of final print. First meeting at 10 A.M. on July 2. Fee, \$20.

These courses are coordinated with the Summer Arts Festival. See pp. C-6-C-8.

Typewriting. See Hotel Administration 37, p. 48.

SPECIAL PROGRAMS OF THE SUMMER SESSION

The following Special Programs are offered during the Summer Session period. Some programs occur during periods other than the regular eight- or six-week session. Note the dates scheduled for each program. Additional Special Programs may be added before the session begins. Inquiries are invited.

In most cases, the Special Programs are set up to serve a specific clientele and vary from the regular Summer Session procedures in one or more features such as tuition rates, length of period, application procedures, registration process, etc. The variations are noted in the description of each program.

In certain programs it is possible for a student registered in the eight- or six-week Summer Session to elect a course from a Special Program as part of his schedule. Likewise, depending on the date the Special Program begins, it may be possible for a student admitted to a Special Program to add an eight- or six-week session course to complete his studies in the summer. In all cases of this nature, the Summer Session tuition rate will apply for the elected course rather than the rate specified for the Special Program. Registration in a course in a Special Program must be approved by the Program director.

Applicants for admission to a Special Program do not use the application form provided in the back of this *Announcement*. Instructions for requesting further information and application forms accompany the descriptions of the following Special Programs.

ADVANCED PLACEMENT PROGRAM FOR SECONDARY SCHOOL JUNIORS

July 1—August 14

The Advanced Placement Program for Secondary School Juniors, open only to academically talented students who will have completed the eleventh year in secondary school by June 1970, is offered to enable college-bound students to achieve advanced placement in college.

The program offers college-level courses in anthropology, biology, chemistry, comparative literature, economics, geological sciences, government, human development, French, German, Russian, Spanish, mathematics, physics, psychology, and sociology. Students may earn a minimum of six credit hours to be recorded with the registrar of Cornell University for subsequent transfer as desired. The program requires full time study for the six-week session.

Special provisions are made for housing, dining, and counseling services. The usual health services and all extracurricular activities provided in the Summer Session are made available. The total charge to each student is \$575. This covers all costs except textbooks and personal expenses.

Brochures regarding this program were mailed in January and the deadline has passed for requesting application forms for the 1970 program. Those interested in the 1971 program may receive further information by writing to Director, Advanced Placement Program, Secondary School Juniors, 375 Olin Hall, Cornell University, Ithaca, New York 14850.

ADVENTURES IN PHYSICS FOR HIGH-ABILITY SECONDARY SCHOOL STUDENTS

Supported by the National Science Foundation

July 1—August 14

Adventures in Physics for High-Ability Secondary School Students is a program designed for secondary school students who will have completed eleventh grade. It provides a superior opportunity in physics, in both classroom and laboratory, to supplement the usual offerings in the secondary school. The program is designed:

- (1) to impart to the student some of the exciting adventure of physical science in our present-day culture,
- (2) to facilitate self-evaluation of the student's personal interest in science, and
- (3) to provide a meaningful first exposure to the academic atmosphere of the college.

This program will not duplicate or take the place of any conventional college course, but it will supplement the secondary-school physics experience by a treatment in depth of some fundamental physical concepts and theories, and by independent experimental work in a well-equipped laboratory.

Brochures regarding this program were mailed in January and the deadline has passed for requesting application forms for the 1970 program. Those interested in the 1971 program may receive further information by writing to Professor R. C. Richardson, Director, Adventures in Physics, Clark Hall, Cornell University, Ithaca, New York 14850.

AGRICULTURAL EDUCATION SUMMER PROGRAM

July 6—31

Three-week unit courses in technical agriculture and education are available to teachers of agriculture and other professional workers in agricultural education. The three-week courses provide an opportunity for professional improvement without the need for extended leaves of absence from positions.

A one-week Natural Resources Institute and a one-week workshop is also available to teachers of agriculture and other professional workers. (See listing on pp. 64-65).

Graduate credit earned in three-week unit courses may be applied toward the Cornell residence requirement only for the professional degree in Education but not for other Cornell graduate degrees. Students desiring to become candidates for this degree should also register in the Graduate School (see pp. 14-16). The courses may also be applied toward meeting certification requirements.

Final registration for the three-week session will take place on July 6, 1970, at a time and place to be announced.

For further information, address J. P. Bail, Director, Agricultural Education Summer Program, 209 Stone Hall, Cornell University, Ithaca, New York 14850.

A complete outline of the course offerings follows:

64 AGRICULTURAL EDUCATION

*Agr. Eng. 449u. SMALL GASOLINE ENGINE MAINTENANCE AND REPAIR (U,G)

Two hours credit. *July 6 to July 24.* M T W Th F 10-11:50, Riley-Robb 60, and M T Th 1-4, Riley-Robb 64. Mr. Lechner.

The course includes instruments and laboratory practice in preventive maintenance and overhaul of small gasoline engines. Each student will be expected to bring to class one or two engines that need overhaul, and to purchase the parts needed. The class is designed primarily for vocational-agriculture teacher needs but any interested student may enroll. Fee, \$3.

Ed. 532u. METHODS AND MATERIALS OF TEACHING AGRICULTURE (U,G)

Two hours credit. *July 6 to July 24.* Lectures, M T W Th F 8-9:50, Warren Hall 232. Mr. Berkey.

Consideration is given to an analysis of selected teaching techniques and to the selection, preparation, and use of instructional materials in agriculture.

Ed. 630u. SEMINAR IN AGRICULTURAL EDUCATION (G)

Two hours credit. *July 6 to July 24.* M T W Th F 10-11:50. Warren 232. Staff.

The seminar will be centered on current problems affecting the teaching of agriculture in the secondary school. Consideration will be given to such areas as curricula, youth organizations, directed work experience, and other problems as identified by the students and instructor.

Ed. 499u. INFORMAL STUDY IN EDUCATION (U,G)

Credit and hours as arranged. *July 6 to July 24.* Consent of instructor required. Staff.

Ed. 500u. SPECIAL STUDIES IN EDUCATION (G)

Credit and hours as arranged. *July 6 to July 24.* Consent of instructor required. Staff.

Students working on theses or other research projects may register for this course.

Ed. 433u. SPECIAL PROBLEMS IN AGRICULTURAL EDUCATION (G)

One hour credit. *July 27 to July 31.* Registration by permission. M T W Th F 9-12, 1-4. Warren 201. Mr. Berkey and staff.

A special workshop on the organization and development of the student teaching program in agricultural education. Designed for current and prospective supervising teachers.

Natural Resources Institute

July 20-25

Three concurrent courses in natural resource management offered for one credit hour each. Students may enroll for only one course. Courses designed as subject background for those who train and counsel skilled and/or para-professional workers in natural resource management fields. Preference given to occupational teachers in secondary schools and interested college instructors. Others admitted to the capacity of the Arnot Conservation Education Center: sixty students.

Institute convenes daily, July 20-25, 8:30-4:30, with three evening sessions to be scheduled. All instruction is presented at the Cornell Arnot Conservation Education Center. Meals and lodging are available at this location. Messrs. Brumsted, Caslick, Dickson, Gilbert, and Winch.

Inquiries should be addressed to: Professor Joe P. Bail, Department of Education, Stone Hall, Cornell University, Ithaca, New York 14850.

Consv. 303u. INTRODUCTION TO FOREST LAND USE (U,G)

One hour credit. No prerequisite. Course will consist of lecture and field practice. Messrs. Dickson and Winch.

Soils as a basis for forest growth will be examined. Major tree species will be identified and their site requirements discussed. Also studied will be units of measurements from standing tree to sawed lumber; maple syrup, Christmas tree, charcoal, firewood and lumber production; enhancement of wildlife habitat; recreational use of the forest; forest aesthetics.

Consv. 411u. INTRODUCTION TO WILDLIFE RESOURCES (U,G)

One hour credit. No prerequisite. Lectures and field trips. Messrs. Caslick and Gilbert.

An overview of New York's wildlife resources and ecological principles related to their management. Identification of plants and animals, natural communities and habitat management techniques will be studied, with emphasis on local terrestrial forms.

Consv. 503u. ADVANCED PRINCIPLES OF WILDLIFE MANAGEMENT (U,G)

One hour credit. Prerequisite, 411u or permission of instructor. Lectures and field trips. Messrs. Brumsted and Gilbert.

Fundamental mechanisms of wildlife populations, with emphasis on management applications in sport fisheries and for game birds and mammals. Special consideration given fish pond management and the ecology and value of freshwater marshes.

ARCHITECTURE SUMMER TERM

Mid-June to Mid-August

A summer term will be offered in the Field of Architecture if there is student demand for it and adequate faculty available. The term is usually of ten weeks' duration, starting in mid-June and ending in mid-August. It will be offered at both graduate and undergraduate levels and carries credit for successful work.

At the undergraduate level, the time is devoted exclusively to one subject, architectural design, credited as Elective Design 119. Ten hours of credit will be given for successful completion of the work by petition of the student and it may be considered one term of design as required in the curriculum. The number of hours of credit in excess of those required for the sequence of study may be allocated to elective credit hours.

Registration will be limited to students of satisfactory standing who have completed the sophomore year of study. However, students of better-than-average ability and performance may petition the faculty for Summer Session enrollment after completion of freshman design. Two summer terms in consecutive years will not be permitted without the approval of the faculty.

Students from schools of architecture other than Cornell are invited to apply to the College for admission to the program.

At the graduate level, the summer term is devoted to problems forming part of the student's program of work. The term may carry residence credit equal to that of a normal academic term. Participation in the program cannot be undertaken without the consent of the student's adviser.

For further information write to the Director, Architecture Summer Term, East Sibley Hall, Cornell University, Ithaca, New York 14850.

ASIAN LANGUAGE PROGRAM

June 18—August 26

A program of intensive language instruction in Burmese, Chinese (Mandarin), Indonesian, Javanese, Thai, and Vietnamese. Thirty-seven courses are available during the period of ten weeks in which the student may earn credit within a range of from six to twelve hours.

Tuition for the program is \$65 per credit hour. Fees amount to \$5 per week. For further information and application forms, address the Director, Asian Language Program, 108 Franklin Hall, Cornell University, Ithaca, New York 14850.

Burmese

101–102. Elementary Burmese. Twelve hours credit.

201–202. Intermediate Burmese Reading. Six hours credit.

Chinese (Mandarin)

101–102. Elementary Chinese (Mandarin). Twelve hours credit.

102X. Elementary Chinese (Mandarin). Six hours credit.

Intended for students who have had some previous study in Chinese (Mandarin) but have not reached the level of the regular 102 course. This course covers the first five weeks; courses 201X and 203X (listed below) are to be taken concurrently during the second five weeks. Placement is by examination.

201–202. Intermediate Chinese (Mandarin). Six hours credit.

201X–203X. Intermediate Chinese (Mandarin). Six hours credit.

Intended for students who have been placed in Chinese 102X for the first five weeks (see above). Courses 201X and 203X are to be taken concurrently during the second five weeks. Placement is by examination.

203–204. Intermediate Chinese (Mandarin) spoken. Six hours credit.

Indonesian

101–102. Elementary Indonesian. Twelve hours credit.

201-202. Intermediate Indonesian Reading. Six hours credit.

May be taken concurrently with 203-204. Courses 201-203 cover the first five weeks, courses 202-204 cover the second five weeks.

203-204. Intermediate Indonesian Composition and Conversation. Six hours credit.

May be taken concurrently with 201-202. See above.

301-302. Readings in Indonesian and Malay. Eight hours credit.

303-304. Advanced Indonesian Conversation and Composition. Eight hours credit.

Javanese

131-132. Elementary Javanese. Six hours credit.

Thai

101-102. Elementary Thai. Twelve hours credit.

201-202. Intermediate Thai Reading. Six hours credit.

301-302. Advanced Thai Reading. Eight hours credit.

Vietnamese

101-102. Elementary Vietnamese. Twelve hours credit.

201-202. Intermediate Vietnamese Reading. Six hours credit.

301-302. Advanced Vietnamese. Eight hours credit.

CITY AND REGIONAL PLANNING

Continuing Education in Planning

June 14-June 19

The eighth annual offering of short courses by the Department of City and Regional Planning is intended to serve the needs of professionals in city and regional planning and related fields such as urban renewal, community and regional development, and institutional planning.

The courses described below will be offered concurrently. No academic credit is awarded, but a certificate is issued attesting to participation and successful completion for each course.

Tuition and fees for each course: \$200. That sum includes housing in University facilities. A limited number of scholarships will be offered.

For further information and application forms, address the Director of Summer Institute, Department of City and Regional Planning, 106 West Sibley Hall, Cornell University, Ithaca, New York 14850.

INTRODUCTION TO URBAN DESIGN

Professor Stuart W. Stein, Mr. Steven W. Hurtt, and guest lecturers.

An introduction to the theory, historic precedents, and practice of urban design. The course is organized specifically for people who have no background in design or only a limited exposure to the activities of physical designers. It will deal with the relationships of the designer and planner to the city and will be focused on the issues involved in the creation of a suitable physical environment for cities.

DATA PROCESSING AND GOVERNMENT INFORMATION SYSTEMS IN PLANNING

Mr. Jon Lang and guest lecturers.

A basic introduction to the field designed to provide an opportunity for practitioners to become familiar with programming, equipment, and procedures. No prior knowledge or experience is necessary. Design and implementation of application to planning, equipment use, data reduction and analysis, programming case studies.

HISTORIC PRESERVATION PROGRAMS

Professors Stephen W. Jacobs, Barclay G. Jones, Mrs. Constance Werner Ramirez, and guest lecturers.

An introduction to preservation planning for private citizens, urban planners, and other professionals; an introduction not only to the means of safeguarding our heritage, but also to the opportunity to use the values of sites and buildings of previous times as resources for planning for the future. In addition to discussions of case studies and the underlying social-psychological basis for preservation, there will be lectures on survey techniques, visual programming, scenic and historic legal controls, private involvement, and the potential of federal, state, and local programs for preservation planning.

INTRODUCTION TO SOCIAL PLANNING

Mrs. Janet Reiner, and guest lecturers.

Planning social services such as health, education, and welfare requires: (1) substantive knowledge of policy, planning, and programming in these fields; (2) development of approaches to delineate subgroups in the community and to understand reactions which various populations (particularly the least educated, least urbanized and poorest individuals and groups) have to alternative program packages.

Development of such a social planning approach to planning social services begins with examination of the styles of life of specialized sectors of the population. The outcome is a set of incremental programs which fit means to ends and test their fit continually in terms of impact on persons.

PROGRAM BUDGETING AND BENEFIT-COST ANALYSIS

Professor Courtney Riordan and guest lecturers.

An introductory course intended to provide theoretical understanding and practical knowledge of new organizational and analytical approaches to normative public decision making. Course material will consist of a combination of theory, case studies, and consideration of current issues and thought regarding the practicality and effectiveness of implementation. Emphasis will

be upon the use of these new approaches to improve planning and public expenditure analysis at the level of state and local government. No prior training in budgeting or public finance is necessary.

COLLEGE AND UNIVERSITY PLANNING AND INSTITUTIONAL RESEARCH

Professors Kermit C. Parsons, Thomas W. Mackesey, Thomas R. Mason, and guest lecturers.

Designed to provide an intensive week of study in college and university campus planning that will permit an interchange of approaches between the participants as well as instruction in the methods and techniques of research, analysis, plan preparation, and implementation.

Topics include: statewide planning for higher education, community planning and campus planning, urban renewal and campus development, organization for university planning, institutional research, utilization studies, scheduling and simulation, plan development/facilities programming, the capital budget, and case studies.

CITY AND REGIONAL PLANNING

INTERNSHIP PROGRAM IN PLANNING AND PUBLIC ADMINISTRATION

June 29—August 21

A summer internship in the New York metropolitan area in public planning, development, and renewal agencies, in planning consultants' offices, in private organizations, or with citizen groups, combined with lectures and discussions two evenings a week and field trips in the New York area and to other east coast cities. Tuition is \$210 for three hours of credit. Several Richard King Mellon Charitable Trusts Scholarships are available.

Offered primarily for M.R.P. candidates in the Department of City and Regional Planning but open to students in other departments at Cornell and to students in planning programs at other universities. Admission by permission of the Department. For further information address Professor Stuart W. Stein, Department of City and Regional Planning, Sibley Hall, Cornell University, Ithaca, New York 14850.

Plan. 542. CITY PLANNING PRACTICE (G)

Three hours credit. *June 29 to August 21.* Admission by permission of department only. Mr. Stein, staff, and visiting lecturers.

CORNELL ALUMNI UNIVERSITY

July 12—August 8

The Cornell Alumni University, a special summer program designed for alumni, their families, and their friends, provides an opportunity for continuing education based on a broad approach to man and his values in today's society. The program, consisting of four one-week units, offers two series of lectures on each week's topic. Each lecture series will feature four

professors, who will present different viewpoints on the topic under discussion. Seminars will be held following the lectures, to afford all participants an opportunity to share and exchange their viewpoints.

This educational program, together with the natural beauty of the Cornell campus and the recreational opportunities for which the Finger Lakes region is known, offers both a stimulating and pleasantly relaxing vacation.

Families are encouraged to attend and provisions have been made for children of all ages. The teenagers can participate in a modified academic and recreational program, which is designed to stimulate their interest in higher education and acquaint them with the opportunities afforded at Cornell University. A day camp will be available for youngsters from five through twelve years of age, a nursery school for the three- to five-year olds, and, at an additional charge, individual babysitting will be available for children under three years of age.

Tuition charge per week per person, including room and board, is \$110 for adults and \$65 for youngsters. Any additional fees will be indicated on the application for admission.

The program expects to accommodate approximately 175 adults per week. For alumni, all applications will be accepted on a first-come, first-served basis. Individuals who are not Cornell graduates are welcome to join the program provided space is available.

For further information and application forms, write to Mr. G. Michael McHugh, Director, Cornell Alumni University, 431 Day Hall, Ithaca, New York 14850.

Program

CONTROLLING MAN'S WORLD

First and third weeks: *July 13-17 and July 27-31*

Cornell Faculty Presenting Lecture Series:

Thomas Eisner, Ph.D., Professor of Neurobiology and Behavior

Walter R. Lynn, Ph.D., Professor of Environmental Systems Engineering

John W. Mellor, Ph.D., Professor of Agricultural Economics

Arthur W. Rovine, L.L.B., Ph.D., Assistant Professor of Government

THE WORK OF ART: PRIVATE CREATION AND SOCIAL CONCERN

Second and fourth weeks: *July 20-24 and August 3-7*

Cornell Faculty Presenting Lecture Series:

William W. Austin, Ph.D., Goldwin Smith Professor of Musicology

H. Peter Kahn, M.A., Lecturer in Six Year Ph.D. Program, Artist

Thomas W. Mackesey, B.Arch., M.C.P., Vice President for Planning, Former Dean, College of Architecture

Alain Sezneq, Ph.D., Associate Professor of French, Romance Studies

INSTITUTE IN EARTH AND SPACE SCIENCE

Supported by the National Science Foundation

June 22-August 8

This program is the final unit of a four-summer sequential institute in the earth sciences for teachers of secondary schools. The course of study leads to

the degree Master of Science for Teachers with concentration in astronomy and the atmospheric sciences. Financial support is limited to the twenty-five teachers presently registered in the Graduate School for the M.S.T. degree.

Courses to be offered include astrochemistry, galactic structure and cosmology, oceanography, and microclimatology.

For further information, address Professor R. William Shaw, Clark Hall of Science, Cornell University, Ithaca, New York 14850.

ENGINEERING COOPERATIVE PROGRAM SUMMER TERM

June 8–September 5

ADMISSION. Selected courses of the regular curricula in the College of Engineering are offered in the summer to accommodate the schedule of Cornell students in the Cooperative Program. Within the enrollment capacity of each course, other students may be admitted provided they present satisfactory evidence of being prepared and a letter of authorization from the college or university in which they are enrolled. A schedule of courses to be offered will be available after April 15, 1970.

CALENDAR. Courses are scheduled in two separate but consecutive seven-week periods: first period, June 8–July 22; second period July 23–September 5.

TUITION AND FEES. Because the Cooperative Program's Summer Term is essentially a curriculum term in the College of Engineering, tuition and fees are not those of the six-week Summer Session but are based upon the regular tuition and fees for a semester in the academic year.

REGULATIONS AND SERVICES. In general, the regulations described for the Summer Session apply also to the Engineering Cooperative Program Summer Term. Health services and library facilities are available during the Engineering Cooperative Program Summer Term.

DOUBLE REGISTRATION. Insofar as they can be scheduled, courses of the regular Summer Session may be arranged for students admitted to the Engineering Cooperative Program Summer Term.

For applications, address Director of the Engineering Cooperative Program, Upson Hall, Cornell University, Ithaca, New York 14850.

ENGINEERING SHORT COURSES

Coordinated by the Office of Continuing Education, College of Engineering

Noncredit courses for practicing engineers and scientists who wish to extend or update their knowledge of various technical subjects. Lectures, computation sessions, and laboratory periods.

For information and application forms, write to the Director of Continuing Education, 251 Carpenter Hall, Cornell University, Ithaca, New York 14850.

Agricultural Engineering

(See also Water Resources Engineering.)

DESIGN OF SMALL RESERVOIRS

Professors R. D. Black, M. I. Esrig. Fee: \$200. One week: *July 20-24.*

Chemical Engineering

(See also Microscopy.)

BIOENGINEERING SEPARATIONS

Professors V. H. Edwards, R. K. Finn. Fee: \$225. One week: *July 13-17.*

Computer Science

(See also Mechanical Design.)

AUTOMATIC TEXT AND PICTURE PROCESSING

Professors G. Salton, A. C. Shaw. Fee: \$225. One week: *June 15-19.*

COMPILER CONSTRUCTION

Professor D. Gries. Fee: \$225. One week: *June 15-19.*

Land Use and Land Planning

LAND USE AND NATURAL RESOURCE INVENTORIES

Professor D. J. Belcher and guest lecturers. Fee: \$300. Eight days: *June 15-22.*

APPLICATION OF RESOURCE DATA TO PLANNING PROBLEMS

Professor D. J. Belcher and guest lecturers. Fee: \$300. Eight days: *June 15-22.*

Materials Science and Engineering

COMPOUND COMPOSITES

Professors R. H. Lance, H. H. Johnson, E. Scala. Fee: \$225. One week: *June 15-19.*

Mechanical Design

(See also Structural Engineering.)

DIGITAL SIMULATION OF MECHANICAL SYSTEMS

Professors R. L. Ruhl, J. F. Booker. Fee: \$225. Two weeks: *June 15-27.*

Microscopy

LIGHT MICROSCOPY

Professor G. Cocks. Fee: \$225. One week: *July 13-17.*

ELECTRON MICROSCOPY

Professor G. Cocks; Mr. S. Breese. Fee: \$450. Two weeks: *July 20-31.*

Operations Research

QUEUING THEORY: DEVELOPMENTS AND APPLICATIONS

Professor N. U. Prabhu. Fee: \$225. One week: *June 15-19.*

Structural Engineering

(See also Mechanical Design.)

FINITE ELEMENT ANALYSIS: FUNDAMENTALS

Professor R. H. Gallagher. Fee: \$225. One week: *June 15-19.*

FINITE ELEMENT ANALYSIS: INELASTIC PROBLEMS

Professors R. H. Gallagher, P. V. Marcal. Fee \$225. One week: *June 22-26.*

FINITE ELEMENT ANALYSIS: FLOW PROBLEMS

Professor R. H. Gallagher. Fee: \$225. One week: *June 29-July 3.*

STRUCTURAL DESIGN FOR EARTHQUAKES AND OTHER DYNAMIC LOADS

Professor P. Gergely. Fee: \$225. One week: *June 22-26.*

Thermal Engineering

HEAT PIPES: PRINCIPLES AND APPLICATIONS

Professor B. Gebhart. Fee: \$225. One week: *June 15-19.*

THERMAL POLLUTION AND HEAT REJECTION PROCESSES

Professor F. K. Moore and guest lecturers. Fee: \$250. One week: *June 22-26.*

Water Resources Engineering

(See also Thermal Engineering.)

ENGINEERING CONTROL OF WATER-BORNE WASTES

Professors C. D. Gates, R. D. Loehr, V. C. Behn, A. W. Lawrence. Fee: \$225. One week: *June 22-26.*

Engineering Management

MODERN ENGINEERING CONCEPTS FOR TECHNICAL MANAGERS

Staff of forty-three lecturers. Fee: \$800 (including housing and meals). Two weeks: *June 15-27.*

INTERPERSONAL RELATIONS AND GROUP DYNAMICS FOR TECHNICAL MANAGERS

Professors C. Alderfer, T. M. Lodahl. Fee: \$250. One week: *July 13-17.*

INTRODUCTORY PROGRAM IN FIELD ECOLOGY

July 27–August 28

The program in field ecology will feature a unique, integrated study of terrestrial and aquatic ecology of the eastern United States. All factors of the environment, from soils and geology to plants and animals, including man, will be incorporated. Emphasis will be placed on field studies supervised by teams of staff members. The students will conduct individual projects. There will also be seminars and special lectures given by authorities.

The study of man and his natural surroundings, with an approach to a quality environment, will be the overriding theme. An attempt will be made to instill in each participant a strong conservation ethic and an appreciation for natural resources.

The field work will be done at two properties owned by Cornell University: Arnot Forest and Shackelton's Point. The course is open to all interested students, graduate or undergraduate, who have had at least one year of college biology. Students must also have had experience in the use of the taxonomic keys.

The cost per person is \$500, payable to Cornell University at registration. This amount covers tuition, fees, room and board, insurance, and transportation during the five-week period. Limited financial help in the form of scholarships and assistantships is available. Five hours credit will be received by each participant for satisfactory work.

Enrollment will be limited to thirty students. Applications must be received by April 1, 1970. Requests for application forms should be sent to the Summer Program in Field Ecology, B-20 Ives Hall, Cornell University, Ithaca, New York 14850.

Consv. 102u. INTRODUCTION TO FIELD ECOLOGY (U,G)

Five hours credit. *July 27 to August 28.* Registration limited to thirty students. Prerequisites, at least one year of college biology, and experience in the use of taxonomic keys. Lectures, seminars and field studies. Messrs. Oglesby and Gilbert are in charge, supplemented by other faculty.

CORNELL GERMAN PROGRAM IN HEIDELBERG

June 8–August 8

Cornell's German Program in Heidelberg affords students the opportunity of receiving instruction in German language, literature, and contemporary

culture in one of the most interesting of German cities. Classes will meet three hours a day, five days a week, for approximately seven weeks. Participants will be divided into groups according to their level of preparation. Advanced students will be given the opportunity to attend regular courses at the University of Heidelberg in addition to the instruction given by the Cornell staff in charge of the program.

Besides regularly scheduled classes, students will participate in a variety of cultural and social events. Weekend excursions will form an important part of the program. To facilitate maximum exposure to the German-speaking environment, every effort will be made to house students with individual German families.

The courses taken will be equivalent to those offered during the regular academic year. Six hours of college credit will be granted for satisfactory completion of the program. Participating students must have qualification in German or equivalent competency at the beginning of the program. Faculty in charge are Messrs. Bansberg, Jones, and Wetzel.

The cost of the Program is approximately \$800, which includes round-trip transportation from New York, travel in Germany, tuition and instructional expense, cultural activities and room and board. Not included are costs for extra travel and personal expenses.

The deadline for the 1970 Program has already passed. Those interested in a similar program for 1971 may receive further information by writing to the Chairman, Department of German Literature, Cornell University, 172 Goldwin Smith Hall, Ithaca, New York 14850.

UNIT COURSES IN GUIDANCE

Offered by the Department of Education

July 6-24

The two courses described below are made available to counselors on a three-week basis in order to provide an opportunity for professional improvement without the need for extended leaves of absence from employment. Credit earned may be applied toward meeting requirements for permanent certification for school guidance positions.

For further information and application forms, address Professor A. Gordon Nelson, 215 Stone Hall, Cornell University, Ithaca, New York 14850.

Ed. 587u. PRACTICUM IN MEASUREMENT AND APPRAISAL FOR COUNSELORS (G)

Two hours credit. *July 6 to July 24*. Prerequisite, a basic course in psychological testing. M T W Th F 10-11:50. East Roberts 223. Mr. Andrus.

An advanced course in the use of tests and test results in the psychological appraisal of individuals. Emphasis will be placed on analysis of testing programs, intensive examination of selected standardized tests, and laboratory experience in interpreting test results. Designed to meet a New York State permanent certification requirement for guidance counselors.

Ed. 588u. CASE STUDIES IN COUNSELING (G)

Two hours credit. *July 6 to July 24*. Prerequisites, Ed. 555, Ed. 582, Ed. 583, and Ed. 585, or their equivalents. M T W Th F 8-9:50. East Roberts 223. Mr. Feierstein.

An advanced course in counseling in which cases are used for illustrative purposes. Preparation for and conducting of counseling interviews; the making of case studies; referral and other procedures. Required for permanent certification in guidance in New York State.

HOTEL ADMINISTRATION

June 22—August 7

In 1922 Cornell University established, with the cooperation and financial assistance of the American Hotel Association, a four-year course in hotel administration for secondary school graduates desiring to enter the administrative departments of the hotel business. Many hotel proprietors and managers who have been unable to take a four-year university course have asked for shorter courses with less formal entrance requirements.

To meet this demand, unit courses in hotel administration, one to three weeks in length, are offered in the Summer Session. A circular giving full details of these courses has been issued and will be sent upon request. For this circular, for other information about the work in the School, and for admission to these courses, address the Administrative Aide, Summer School of Hotel Administration, Statler Hall, Cornell University, Ithaca, New York 14850.

HUMAN ECOLOGY UNIT COURSES

July 6—August 14

Unit courses are offered in two departments of the newly reorganized College of Human Ecology (formerly Home Economics). These courses are planned for teachers and for other professionals in educational and social action programs designed to bring about change in the everyday behavior of the learner. Of the three courses sponsored by the Department of Community Service Education, CSE 516*u* concentrates on training for maximum participation of the learner in the learning process; CSE 480*u* is a general curriculum course intended especially for teachers who are seeking a "refresher" experience; and CSE 585*u* focuses on a particular approach to program planning and implementation, the curriculum module. The course sponsored by the Department of Consumer Economics and Public Policy (C.E.&P.P. 263*u*) is planned for teachers of consumer education and for other professionals working in urban programs involving consumer education.

All units are three weeks in length. They may be combined with each other, with unit courses offered by other departments, or with independent study, to provide a longer program. However, each involves full-time participation for the designated period.

Early applications are requested. Registration will be completed in the first meeting of the class for each course. Address inquiries to the Director, CSE Unit Courses, N134 MVR Hall, Cornell University, Ithaca, New York 14850.

CSE 480*u*. TEACHING HOME ECONOMICS AT THE SECONDARY LEVEL (U,G)

Three hours credit. *July 6 through July 24.* M T W Th F 9-11:30 and additional hours to be arranged. Van Rensselaer N-207.

Consideration will be given to current developments in education and home economics as they relate to program planning and implementation. Opportunity will be provided for work on individual problems.

Designed for experienced teachers who want help in revamping curricula to meet needs of today's adolescents. Others may be admitted after consultation with the instructor.

CSE 516u. PARTICIPATION TRAINING LABORATORY (G)

Three hours credit. *July 27 through August 14.* M T W Th F 9-12. Afternoon laboratory and work groups to be arranged. Van Rensselaer N-207. Miss Imbler.

For teachers, community leaders, Cooperative Extension personnel and other adult educators. Participants will learn to become effective group members as the class develops into a fully functioning learning team. Emphasis will be upon developing skills in group-centered leadership and decision-making. The group will learn to work together to identify problems significant to group members, set learning or action goals, identify and choose resources and techniques, and implement group plans. The course will involve readings in group dynamics, program-planning, and problem-solving and will require full-time participation and involvement. No other classes should be scheduled during this period.

*CSE 585u. WORKSHOP: DEVELOPMENT OF CURRICULUM MODULES (G)

Three hours credit. *July 27 through August 14.* M T W Th F 9-3. Van Rensselaer N-225. Mrs. Nelson and Mrs. Hughes.

This workshop is designed for current or prospective classroom teachers of home economics (occupational or homemaking). The main emphasis will be on the development of flexible modules of curriculum in which learning resources and evaluation are planned around a small core of objectives, concepts, and generalizations. Participants will be able to develop the curriculum module of their choice. A combination of lectures and ample opportunity for individualized work will be provided. Students will be expected to cover costs of materials used for class projects, approximately \$10 to \$15.

C.E.&P.P. 263u. CONSUMER EDUCATION IN INNER-CITY PROGRAMS (G)

Three hours credit. *July 6 through July 24.* M T W Th F 9-12 and 1-4 for independent study and/or field trips. Van Rensselaer 124. Miss Matsen.

The objectives are to develop abilities to identify consumer problems and needs of families within the community, to improve professional teaching techniques, and to become familiar with subject-matter content and resources. Maximum registration is twenty-five.

LATIN AMERICAN LANGUAGE AND AREA PROGRAM

June 22-August 14

The Latin American Language and Area Center, in cooperation with the Institutional Assistance Section of the United States Office of Education, offers a program of intensive language instruction in Quechua. The summer program also includes study opportunities on the society and culture of the Andes.

(Note that beginning Spanish will be offered in the regular six-week Summer Session, see p. 53.)

Financial aid was available to a limited number of graduate and undergraduate students (United States citizens) under the National Defense Education Act, Title VI. Fellowship applications were due March 1, 1970. The deadline for applications for admission (without fellowship assistance) is May 15, 1970. For further information and applications for admission, write to the Director, Latin American Studies Program, 205 Rand Hall, Cornell University, Ithaca, New York 14850.

Andean Studies

Que. 101S. ELEMENTARY QUECHUA (U,G)

Eight hours credit. *June 22-August 14. M T W Th F 8-10 and 11-1. Lincoln 204. Twenty hours of instruction per week for eight weeks. Mr. Solá and staff.*

An intensive introductory course in the Cuzco dialect of Quechua, emphasizing auditory and speaking skills.

Lat. A. 602S. LATIN AMERICAN STUDIES (U,G)

Two hours credit. *June 22-August 14. Hours to be arranged. Program staff.*

A seminar on the society and culture of the Andean region. The seminar is designed to facilitate a greater understanding of the Andean region for students enrolled in the intensive Quechua language course. Various specialists on Latin America will participate in the seminar.

Area Studies

Hist. 320. LATIN AMERICAN HISTORY SINCE INDEPENDENCE

(See p. 47.)

SUMMER PROGRAM IN MARINE SCIENCE

June 6—July 2

This program is offered jointly by Cornell University and the University of New Hampshire. It is designed as a general introduction to marine science, and includes topics such as biology of shore and marine organisms including algae, sea grasses, plankton, invertebrates, teleosts, elasmobranchs, birds, and marine mammals; the tools, techniques, and perspectives of oceanography; marine microbiology and toxins; geological oceanography and coastal geology; mud flat, salt marsh and marine ecology; bird (especially sea gull) behavior; photography in the marine environment; and the techniques and problems of commercial fisheries in the New England area. Faculty will consist of some twenty marine scientists drawn principally from Cornell University and the University of New Hampshire, but including also some specialists and guest lecturers from other universities, the commercial fishing fleet, and industry.

The first two weeks will be presented at the Isles of Shoals, ten miles offshore at Portsmouth, New Hampshire, and the second will be presented, through facilities of the University of New Hampshire including the campus at Durham, at the Jackson Estuarine Laboratory on Great Bay, and at field facilities at Odiorne's Point on the Atlantic Shore.

Enrollment in this Program is limited to thirty students. Expenses will total \$520, half of which is payable to Cornell University and half to the University of New Hampshire. This covers tuition, fees, board, room, health insurance, and special transportation during the four-week period. A limited number of scholarships were made available through funds from the Link Foundation in 1969, and application has been made for similar support in 1970.

Two credits will be awarded by Cornell University and two credits separately by the University of New Hampshire for successful completion of the course. Both parts must be completed to obtain credit for either half. All application procedures for both halves of the Program will be handled by Cornell. The Cornell two-credit course is described below.

For further information and application forms, address the Director, Summer Program in Marine Science, B-20 Ives Hall, Cornell University, Ithaca, New York 14850.

Biol. Sci. 364u. FIELD MARINE BIOLOGY (U,G)

Two hours credit. *June 6 to June 20.* Prerequisite, at least a full year of college biology. Daily lectures, laboratory, and field work. Miss Bush, Mr. Anderson (invertebrate zoology); Mr. Bloom (coastal geology); Mr. Likens (marine ecology, oceanography); Mrs. Moore (photography in the marine environment); Mr. Hewitt (marine birds); Mr. Sawyer (marine fish); supplemented by guest lecturers. Mr. Kingsbury (marine algae), in charge.

READING AND STUDY SKILLS FOR SECONDARY SCHOOL STUDENTS PREPARING FOR COLLEGE (NONCREDIT)

June 29—July 31

Purpose

This program is designed to teach students the reading and study skills necessary for successful scholarship at the college level. It is not for retarded readers or students with below-average ability.

Time Involved

Students will meet daily from nine to twelve beginning Monday, June 29, and ending Friday, July 31. Additional work outside of class time is required each day. If students hope to get the full benefit of the course, they should limit their extracurricular activities during July.

Class Work

Instruction will be given in the following areas:

1. *Reading.* The improvement of both speed and comprehension; special techniques for reading textbooks.
2. *Writing.* The procedure involved in selecting a topic and conducting the research for a term paper. Orientation and use of university libraries.
3. *Study Skills.* Scheduling time; taking lecture notes; taking notes from textbooks; preparing for and taking examinations; reading selectively; reading imaginative prose and poetry.
4. *Listening Skills.* Improvement of ability in the registry and retention of spoken information. "Effective Listening," a basic systems program developed by the Xerox Corporation, will be used.

5. *General Aspects of Communication.* Understanding basic principles of organization; vocabulary building; critical reading of factual material; development of oral facility.

Laboratory Work

Students will work daily in the reading laboratory to practice good reading techniques on reading machines which have proved to be instrumental in increasing both the rate of reading and the level of comprehension. Students will be permitted to use laboratory equipment beyond the time required in their regularly scheduled periods.

Who May Apply?

Secondary school students living within commuting distance of Ithaca who will have finished their junior or senior years in June 1970 and who plan to go to a college or university may apply. Registration will be limited to thirty students. Early applications are encouraged.

Cost

The tuition for the program is \$175. A preregistration deposit of \$25 is required following notification of admission. The remaining \$150 must be paid on the first day of class. There are no scholarships offered in the program.

How to Apply

For application forms and additional information, address Mr. Walter Pauk, Director, Reading-Study Center, 304 Olin Hall, Cornell University, Ithaca, New York 14850.

SHELL MERIT FELLOWSHIP PROGRAM

June 29—August 7

For selected secondary school teachers of science and mathematics. Participants will design audiotape programmed instructional units for individualized student study of science and mathematics. There will be some opportunity to develop and use computers in instruction and monitoring student progress.

The deadline for completed applications for the 1970 program was January 5, 1970. Those interested in the 1971 program may receive further information by addressing inquiries to Shell Merit Programs, Stone Hall, Cornell University, Ithaca, New York 14850.

SUMMER STUDIOS IN ART

See Summer Arts Festival, p. C-6.

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82 RESIDENT FACULTY

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84 RESIDENT FACULTY

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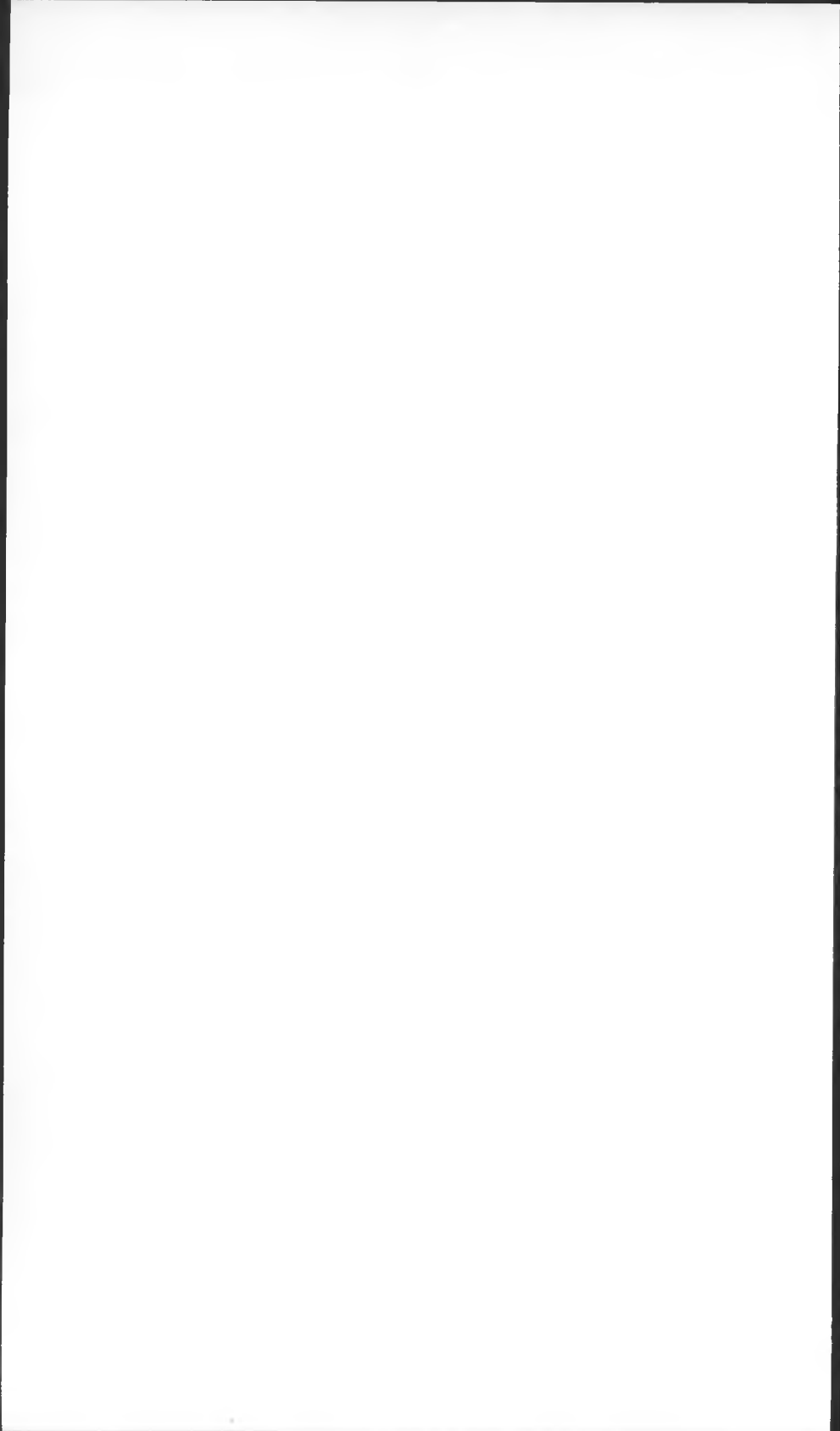
This listing of the faculty of the Summer Session does not necessarily include all appointments to be made for the summer of 1970.

Index

- Academic credit, 8
- Accidents, 19
- Admission, 5-6
 - to graduate school 7, 15
 - to special programs, 8, 62
- Advanced degrees, 14-15
- Administration, 81
 - Summer Session board, 81
- Advanced placement
 - secondary school students, 62
- Adventures in physics, 63
- Agricultural education, 63-65
- Agricultural engineering, 63
- Agricultural orientation, 33
- Algebra, linear, 51
- Analytic geometry and calculus, 49-51
- Andean studies, 78
- Announcements, list of, 89
- Anthropology, 33-34
- Application
 - for admission, 8
 - for graduate school, 6-7, 13-15
 - for special programs, 62
- Architecture summer term, 65-66
- Art
 - History of, 46
 - Summer Art Festival, C-1-C-8
 - Summer studios, C-6
- Art galleries
 - Van Rensselaer, 25
 - White Museum, 24-25
- Asian language program, 66-67
- Auditors, 8-9
- Automobile regulations, 21-22
- Biological sciences
 - Biochemistry, 35
 - General biology, 34-35
 - General ecology, 35
 - Honey bee, 35
 - Ornithology, 29
 - Vertebrate biology, 29
- Bulletin, weekly, 22
- Burmese, 66
- Calendar, 2-3
 - weekly, 22
- Cancellation of courses, 12
- Changes in registration, 12
- Checks, cashing of, 14
- Chemistry, 35-36
- Chinese, Mandarin, 66
- Choir, 24
- City and regional planning
 - Continuing education in planning, 67-69
 - Internship program, 69
- Classics, 36-37
- Classrooms, 27
- Clinic, 19
- Commons, 24
- Composers' workshop, 54, C-4-C-5
- Comparative literature, 37-38
- Community service education, 37, 76-77
- Concerts, 23, C-4
- Consumer economics and public policy, 77
- Conservation
 - Introduction to field ecology, 74
 - Natural resources institute, 64-65
- Cornell Alumni University, 69-70
- Cornell United Religious Work, 23-24
- Counseling services, 19-20
- Credit
 - Undergraduate, 6
 - for advanced degrees, 14-16
 - Graduate, 6, 7, 14, 15
 - toward degrees, 9
 - special students, 7
- Dance and movement, 61, C-6-C-7
- Dean of Students Office, 19
- Dining, 18
- Dormitories, 16-17
- Earth and space science, 70-71
- Ecology, 35, 74
- Economics, 38-39
- Education, 39-42
 - advanced degrees in, 14-15
 - agricultural, 63-65
 - candidates in the field of, 16
- Eight-week session, 29-32

- Electronics, 55-56
- Emergency service, 19
- Engineering
 - agricultural, 64-65
 - cooperative program, 71
 - electrical, 29-30
 - material science, 30
 - short courses, 71-74
 - theoretical and applied mechanics, 30
- English, 42-44
 - as a second language, 53
- Examinations, 28
- Extracurricular activities, 22-26
- Faculty, 81-84
 - Summer guest faculty, 81-82
 - Summer resident faculty, 82-84
- Fees, 13
- Field ecology, 74
- Film production studio, 61, C-7-C-8
- Financial aid, 14
- Foreign languages and literature, 51-53
- French, 51-52
 - literature, 60
- Gannett Clinic, 18-19
- General fee, 12-13
- Geological sciences, 44-45
- German, 52
- German literature, 45
- German program in Heidelberg, 74-75
- Government, 45-46
- Grades, 9-10
- Graduates, admission of, 6-7
- Graduate registration fee, 13
- Graduate school, 6-7, 13-16
 - admission to, 15
 - credit for advanced degrees, 14-15
 - registration fee, 15
 - registration, 15-16
 - completion requirements, 16
 - education, candidates in, 16
- Greek, 36-37
- Guidance
 - unit courses in, 75-76
- Health services, 18-19
- History, 46-48
 - of art, 46
- Hospital, 18-19
- Hotel administration, 48, 76
- Housing and dining, 16-18
 - application for, 17
 - assignments, 17
 - dining services, 18
 - married students and off-campus, 17-18
- Human development and family studies, 48
- Human ecology unit courses, 76-77
- Human nutrition and food, 30-31, 48-49
- Incomplete grades, 10
- Indonesian, 66-67
- Industrial and labor relations, 49
- International Student Office, 20
- Javanese, 67
- Laboratory fees, 12
- Languages
 - Burmese, 66
 - Chinese-Mandarin, 66
 - English as a second language, 53
 - French, 51-52
 - German, 52
 - Greek, 36-37
 - Indonesian, 66-67
 - Javanese, 67
 - Latin, 37
 - Quechua, 77-78
 - Russian, 52-53
 - Spanish, 53
 - Thai, 67
 - Vietnamese, 67
- Late registration fee, 11
- Latin, 37
- Latin American language and area program, 77-78
- Lectures, 24
- Libraries, 20
- Marine science summer program, 78-79
- Mathematics, 31, 49-51
 - engineering, 31
- Medical clinic, 19
- Modern foreign languages and literature, 51-54
- Museums, 24-25
- Music, 54
- Natural resources institute, 64-65
- Off-campus housing, 17-18

- Ornithology, 29
- Philosophy, 54-55
- Physics, 31-32, 55-56, 63
- Psychology, 56-59
- Quantum mechanics, 32
- Quechua, 78
- Reading and study skills
 - for college students, 41
 - for secondary school students, 79-80
- Recreation, 22-26
- Refunds, tuition, 12
- Registration, 10-12
 - changes in, 12
 - eight-week session, 10-11
 - six-week session, 11
 - in graduate school, 13-16
 - late fee, 11
 - in special programs, 11, 62
 - unit courses, 11
- Regulations concerning payments, 13
- Religious services, 23-24
- Residential halls, 16-18
- Romance studies
 - French literature, 60
 - German literature, 45
- Russian, 52-53
- Sage Chapel, 23
- Sage Chapel choir, 24, 54, C-5
- Schedules
 - of courses, 27
 - of examinations, 28
- Scholarships and Financial Aid, Office
 - of, 14
- Shell Merit Fellowship, 80
- Six-week session, 33-61
- Sociology, 60
- Softball league, 26
- Special programs, 62-80
- Special regulations, 21-22
- Special students, admission of, 7
- Sports, 25-26
 - sports-fitness school for boys, 26
- Squash, 25
- Student conduct, 21
- Summer-Ithaca, 26
- Summer theatre, 24, C-6-C-8
- Swimming, 25-26
- Thai, 67
- Theatre arts, 61
- Transcripts, 10
- Tuition, 12-13
- Typewriting, 48
- Undergraduates, admission of, 6
- University administration, 81
- Vertebrate biology, 29
- Vietnamese, 67
- Weekly bulletin and calendar, 22
- Wildlife management, 65
- Willard Straight Hall, 22-23
- Withdrawal from Summer Session, 12



CORNELL UNIVERSITY ANNOUNCEMENTS

The Cornell *Announcements* are designed to give prospective students and others information about the University. The prospective student should have a copy of the *Announcement of General Information*; after consulting that, he may wish to write for one or more of the following *Announcements*:

- New York State College of Agriculture
- College of Architecture, Art, and Planning
- College of Arts and Sciences
- Department of Asian Studies
- Education
- College of Engineering
- School of Hotel Administration
- New York State College of Human Ecology*
- New York State School of Industrial and Labor Relations
- Center for International Studies
- Officer Education (ROTC)
- Summer Session

Undergraduate preparation in a recognized college or university is required for admission to certain Cornell divisions, for which the following *Announcements* are available:

- Graduate School: Biological Sciences
- Graduate School: Humanities
- Graduate School: Physical Sciences
- Graduate School: Social Sciences
- Law School
- Veterinary College
- Graduate School of Business and Public Administration
- Graduate School of Nutrition
- Medical College (New York City)
- Cornell University-New York Hospital School of Nursing (New York City)
- Graduate School of Medical Sciences (New York City)

Requests for the publications listed above may be addressed to
CORNELL UNIVERSITY ANNOUNCEMENTS
Edmund Ezra Day Hall, Ithaca, New York 14850

(The writer should include his zip code.)

*The Announcement of the College of Human Ecology (formerly Home Economics) will be available about April 23, 1970. Information needed earlier may be obtained by writing directly to the Committee on Admissions, Martha Van Rensselaer Hall, Cornell University, Ithaca, New York 14850.



INSTRUCTIONS FOR APPLYING FOR ADMISSION

Please complete both sides of the application form below; be sure to give all information requested. Mail the application to the Director of the Summer Session, B-20 Ives Hall, Cornell University, Ithaca, New York 14850.

Applications for the eight-week session must be received by June 16. The deadline date for the six-week session is June 24. Applications will be accepted after the deadline dates, but in this case registration material will not be mailed out in advance and a place in class cannot be guaranteed. Priority for individual course enrollment is given in the order in which applications are received. See pp. 5-28 for additional information.

FOR UNDERGRADUATES ADMITTED TO CORNELL ONLY

If the institution in which you now are enrolled or to which you have been admitted is Cornell University, the statement of approval which appears on the reverse side of this application form must be signed by the appropriate University official (see p. 9). This applies only to undergraduate degree candidates and is not required of graduate students.

Please tear along perforations

CORNELL UNIVERSITY SUMMER SESSION, 1970

APPLICATION FOR ADMISSION to:

☐ Eight-Week Session

6/22-8/14

☐ Six-Week Session (check one)

7/1-8/14

Mr.

Mrs.

Miss

(Last name)

(First name)

(Middle name)

Present

Address

(Street and number)

(City)

(State)

(Zip Code)

Home

Address

(Street and number)

(City)

(State)

(Zip Code)

Please indicate which address to use after June 1.

OFFICIAL USE ONLY

U
G
S
H

State country of citizenship if not U.S. citizen _____

COMPLETE THE OTHER SIDE OF THIS APPLICATION IN FULL.

Leave the following spaces blank:

Please turn page.

Rev'd

Rec'd

Sent

INSTRUCTIONS ADMISSION APPLICATION AND COURSE PROGRAM

Course Program: On the application form below list the courses you wish to take. These must be selected from the *Announcement of the Summer Session, 1970*. Students are expected to enroll for a minimum of four credit hours in the eight-week session or three credit hours in the six-week session. Programs of more than ten or eight hours, respectively, must be approved by the Summer Session director.

Undergraduate applicants are urged to consult the appropriate official in their own colleges in planning their course programs to ensure that the credit they earn will be accepted toward their degree programs. Students lacking necessary prerequisites will be admitted to courses only by special permission of the course instructor.

Send application to the Director of Summer Session, B-20 Ives Hall, Cornell University, Ithaca, New York 14850.

Deadline dates: Eight-Week Session June 16, 1970
Six-Week Session June 24, 1970

Program dates: Eight-Week Session June 22 to August 14
Six-Week Session July 1 to August 14

Tear along perforations

If degree candidate, name your present college/university _____

Check status which applies:

_____ Candidate for undergraduate degree in good standing

_____ Graduate degree candidate. Degree sought _____

_____ High school graduate accepted for admission.

Special Student: Number years of college completed _____ Degree, (if any) _____

School last attended _____ When? _____

Present employer _____

Position held _____

List your complete program indicating the departmental abbreviation, course number, course title, credit hours, and class meeting time for each course.

Dept. Abbrev.	Course No.	Title of Course	Credit Hours	Meeting Time

Registration approval: CORNELL UNDERGRADUATES ONLY

Signature

Official Title